

AMERICAN ARTISAN

JULY
1942



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RESIDENTIAL AIR CONDITIONING
/ARM AIR HEATING • SHEET METAL CONTRACTING



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1880



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*N*OW, when automatic heating plants must of necessity not only last for the duration, but operate at their peak efficiency, your service work takes on a new significance. No longer can your customers afford to neglect their burners. No longer can you depend upon new equipment sales for your income . . . it's up to you to sell your service . . . and sell it hard. You'll find a cordial reception awaits you when you talk regular automatic heating maintenance. In our national advertising, we are urging your customers to use your service. Take advantage of this opportunity . . . Minneapolis-Honeywell Regulator Company, 2726 Fourth Avenue South, Minneapolis, Minnesota. Branches in 49 cities.



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Regulator Company



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AMERICAN ARTISAN

Covering All Activities in Residential Air Conditioning and Small Commercial Cooling, Warm Air Heating, Sheet Metal Contracting and Fabricating

WITH WHICH ARE MERGED

FURNACES
SHEET METALS

AND

Warm-Air
Heating

J. D. Wilder, Editor

A. A. Kennedy, Assistant Editor

Vol. III, No. 7

July, 1942

Founded 1880

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In This Issue

IT'S been a long time since an American Artisan issue came off the press with as few pictures and as few illustrated feature stories as this July issue shows. ♦

But we think you will agree—if you have the fortitude to read pages 17 to 35 that July was a busy month in Washington. And a very important month, too. The interpretations and amendments to existing orders, the official answers to dozens of the questions we have been asking alone would have been a banner month.

But to clinch the activity, we also have been given Priority Regulation 3 which simplifies the certification you use to buy; also Priority Regulation 11 which puts every large user of metal under a quarterly allocation allowance; also Priority Regulation 10 which sets up an end use allocation plan which many of us have been advocating for many months.

♦ Regulations 11 and 10 sort of go together. Government now intends to find out just where the sheets are going and from that finding decide whether the furnace industry is more important than the septic tank industry. ♦

Having made that decision, the next step will be to allocate to each industry a portion of the available steel. In turn, each manufacturer in the industry will have his allocation determined by where he ships his furnaces. Anyone selling furnaces where furnaces are not needed probably won't get steel. ♦

The above is a poor analogy because it's hard to picture any unnecessary use for a furnace, but it illustrates the point. ♦

The moral—there's a lot of reading between pages 17 and 35, but it's all important.

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Publisher's bind

APR 19 '43

AMERICAN ARTISAN, JULY, 1942

MATTERS that COUNT in War as well as Peacetime



Contributing in no small measure to the predominant popularity of H&C Registers is that extra margin of quality which, furnished at no extra cost, has always made them better values in every price class.



WE PLEDGE

that the surpassingly fine quality always characteristic of H&C Registers, shall be maintained throughout the war period.

THERE IS NO SUBSTITUTE FOR QUALITY!

In wartime housing, too, quality counts! H&C Registers win instant approval. Why not use the best? It costs you nothing extra.

HART & COOLEY MANUFACTURING CO.

Warm Air Registers • Air Conditioning Grilles • Damper Regulator Sets • Dampers • Chain • Pulleys

HOLLAND



MICHIGAN

Philadelphia Office

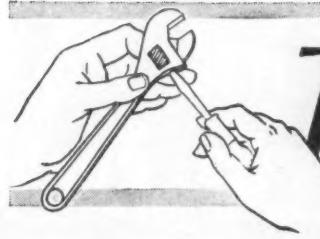
1600 Arch Street

Western Representatives: Godfrey Rueger Co., Los Angeles, San Francisco, Portland, Seattle, Salt Lake City, Denver



SHOWN ABOVE

is the No. 130 Baseboard Register—unmatched for gravity installations, the last word in registers for conversion jobs. This is but one of several H&C Registers ideally suited to every type of War-time housing. Write for No. 42 catalog if not at hand.



TOOL NOTES

Maintenance
and Repair
Suggestions to
Prolong Tool Life

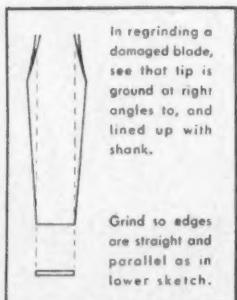
No. 2 HOW TO USE, AND KEEP CRESCENT SCREWDRIVERS IN GOOD WORKING ORDER

as a hammer. This kind of abuse will quickly ruin the best screwdriver made. Moral: Use screwdrivers only for the purpose for which they are made, driving screws.

USE THE CORRECT SIZE SCREWDRIVER PROPERLY

The first rule is to use the *right* size screwdriver for the job. In other words, a screw with a large head requires a large screwdriver. Don't use a small screwdriver to drive a large screw. For example, you'll quickly ruin a cabinet screwdriver if you try to drive #10 screws with it. Don't try to use one corner of a large screwdriver to sink a small screw. In this case, the screw is usually damaged.

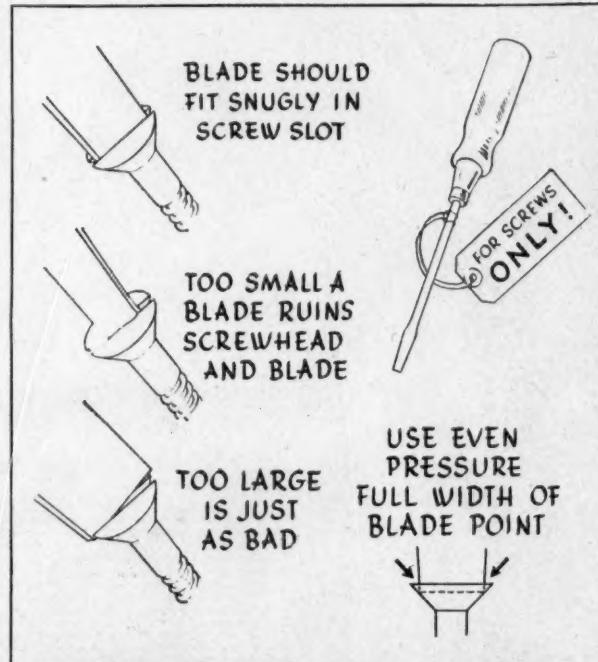
USE CARE IN REGRINDING



When the blade tip of a screwdriver becomes damaged, it should be re-ground to its original shape (see diagram). Grinding must be done carefully to prevent overheating and drawing the temper out of the blade.

CRESCENT FERRULES STAY TIGHT

The ferrules on Crescent Screwdrivers are turned from solid bar steel and are forced on the blade under high pressure. They will not come loose. On most types of Crescent Screwdrivers, the blade rod goes clear through the seasoned hardwood handle and can be loosened only by breaking the handle. Remember, always treat your Crescent Tools well—they're worth it.



CHARACTERISTICS OF A GOOD SCREWDRIVER



CRESCENT TOOLS
Give Wings to Work

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CRESCENT & CRESTOLOY WRENCHES, PLIERS, SCREWDRIVERS, SNIPS, HACK SAWS, ETC.



Century Repulsion Start
with rigid base



Century Capacitor Motor
with cushion base



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Motor for all DC
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Century Split Phase
Oil Burner Motor

One of the Largest Exclusive
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Century
MOTORS

Look to CENTURY MOTORS For DEFENSE JOBS Involving Heating, Cooling or Ventilating Applications

For the four widely diversified operations of air conditioning — air cooling, heating, circulating, and fluid pumping — you'll find the correct Century Motor. Century's wide variety of motor types and sizes, from fractional to 400 horsepower, assures the proper motor to balance the demands of every job.

Century Motors are designed and engineered to meet the specific demands of each particular application — not only those of the load, but surrounding atmospheric and local power service conditions as well.

On War business, Century has shortened the time necessary to make shipments of AC and DC Motors — particularly standard general purpose, splash-proof, enclosed, and totally enclosed fan-cooled and explosion proof motors.

For more of the advantages of using Century Motors designed for the applications of your industry, see your nearest Century Motor Specialist at once.

252

CENTURY ELECTRIC COMPANY

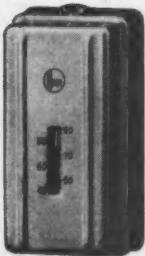
1806 Pine Street

St. Louis, Missouri

Offices and Stock Points in Principal Cities



Install DRAFTENDER To Save Fuel on Hand-Fired Jobs



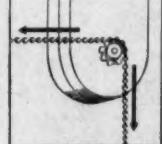
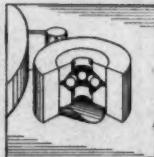
There's a double opportunity, to serve and to profit, by installing Penn Draftender Comfort Control on hand-fired heating systems... warm air, steam, hot water. Draftender effects real savings of coal, and with the emphasis on fuel conservation during the war emergency, there are plenty of sales opportunities.

Draftender automatically operates the drafts under the control of any existing thermostat or by Temtrol, Penn's famous heat anticipating thermostat. This auxiliary heat actuated thermostat actually "senses" temperature changes before they occur, prevents over-runs and wide swings of temperature and thus assures more economical firing.

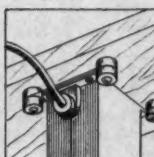
This hand-fired control system is easy to install, provides some important advantages of automatic heating, along with its definitely proved economy. Draftender is ideal for use on the furnaces being installed in defense housing projects. With the toggle switch, which is supplied when desired, for manual operation of the drafts, Draftender conforms with government specifications for use in army barracks.

Furnished for all types of hand-fired heating systems, Draftender Units only are available for immediate delivery, while Draftender Sets including Temtrol are available under existing government regulations. Get in on this profit opportunity now—write for detailed information, without obligation. *Penn Electric Switch Co., Goshen, Ind.*

★
Permanently lubricated self-centering, self-aligning ball bearings carry both ends of the motor shaft; reduce friction and wear.



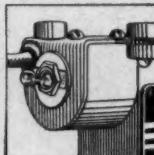
Rugged operating chain is simple to install... very easily aligned... provides long-life dependability.



Unusually quiet motor is further insulated by this four-point mounting in resilient live rubber. Quickly and easily installed.



Draftender is controlled by standard low-voltage thermostat without necessity of installing a separate transformer.



When desired Draftender is equipped with toggle switch for manual operation of draft; meets specifications for barracks heating.



REFRIGERATION, AIR CONDITIONING, ENGINE,

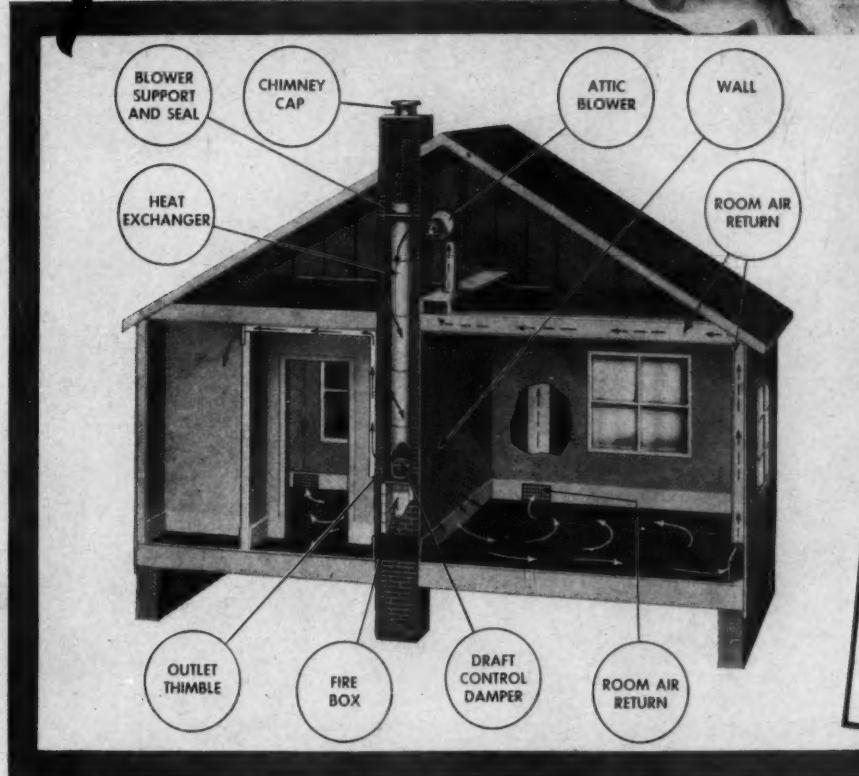
PENN
CONTROLS

HEATING, PUMPING AND AIR COMPRESSOR

MAJOR DEVELOPMENT IN VICTORY HOUSING

THE NEW
ROUND OAK

*Chimney
Furnace*



RELY ON ROUND OAK
FOR YOUR WAR-TIME
REQUIREMENTS



In order to give all dealers rapid service, Round Oak continues to maintain the largest possible stock of furnaces and parts — and can fulfill your war-time requirements for all types of heating equipment that are within government regulations. The Round Oak engineering department will be glad to work with you in every way possible. You can rely on Round Oak service through the emergency.

IMPORTANT *Fluemaster* FEATURES

Unaffected by most war-time heating restrictions • Requires absolute minimum of critical materials • No room space necessary • Located inside the chimney (either first floor or basement) • Uses chimney heat formerly wasted • Mechanical heat circulation • Extremely low operating cost • Exceptionally low price • Only 1/3 size and weight of ordinary furnace • Minimum duct work required • Convertible to oil or gas.

Designed especially for low cost Victory Houses and other small homes, the new Round Oak *Fluemaster* is the welcome answer to war-time heating restrictions — a remarkable business-builder that you can *sell right now!* Unlike any other furnace, this compact, coal-burning unit is entirely concealed inside the chimney, either first floor or basement. Automatic blower helps maintain even temperature. Original cost is low, and unusual efficiency assures surprisingly low operating costs. It's a war-time winner. Write for catalog today!

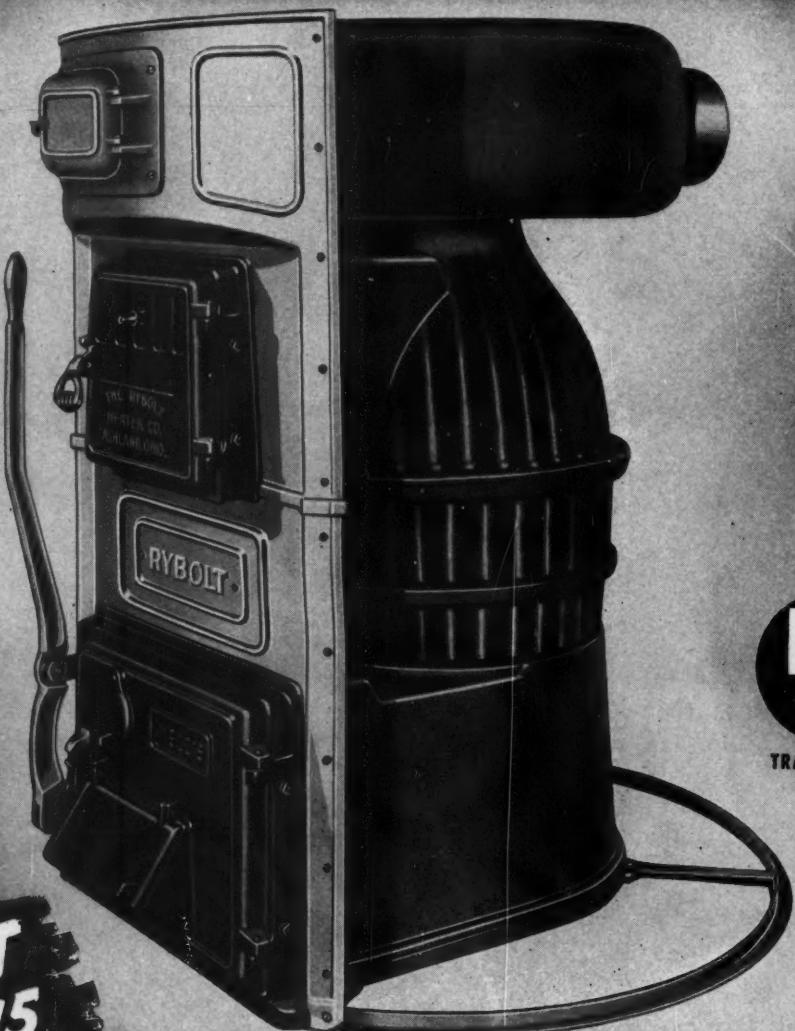
ROUND OAK

of Dowagiac, Mich.

FURNACES • STOVES • RANGES • OIL
BURNERS • AIR CONDITIONERS • STOKERS



RYBOLT



TRADE MARK

**RYBOLT
SERIES 15**



**the quality furnace that rings the bell
for war-time replacement or remodeling**



For replacement of worn out furnaces...for replacement of heating units burning gas or oil with coal-fired equipment (with necessary priority of course)... for remodeling

to provide additional living quarters for defense workers... RYBOLT Series 15 Coal-fired Gravity Furnace satisfactorily meets every war-time regulation or need. 4 sizes.

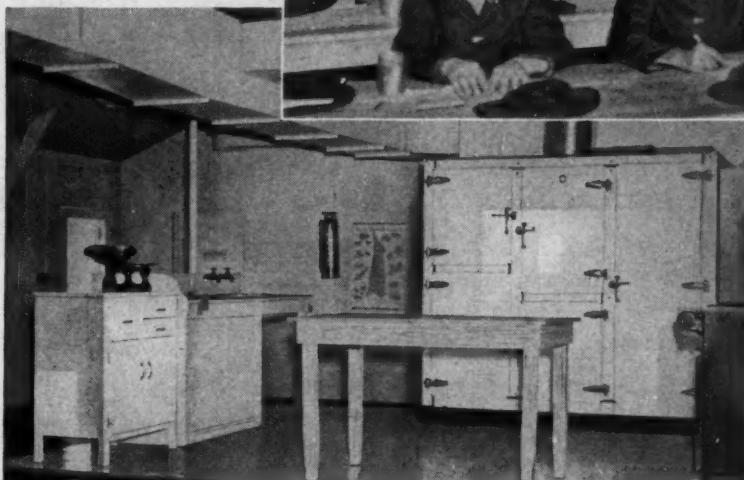
WRITE FOR FOLDER TODAY!

THE RYBOLT HEATER COMPANY
615 MILLER STREET • ASHLAND, OHIO

Future
chefs

for Uncle Sam's fighters

Photos by U. S. Army Signal Corps



The scene above is a cheerful sight for men in the U. S. Army. These recruits, at a training center "somewhere in Texas" are cookery-school students, learning the mysteries of plain and fancy cooking for Uncle Sam's fighting men. View at left shows the school's model kitchen.

Bethlehem Galvanized Steel Sheets

As at lots of other U. S. Army training centers, Bethlehem Galvanized Steel Sheets are on the job at this one in Texas, helping Uncle Sam's future chefs to keep cool. On the job for the duration, too, because of a really tight coating of pure zinc that won't crack off without putting up a stiff fight.

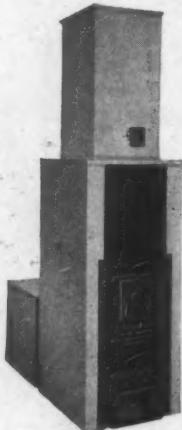
When you handle war jobs—whether ducts, vents and stacks or roofing and siding—use reliable Bethlehem Galvanized Steel Sheets. They're easy-working as well as reliable, and that can make a lot of difference in saving valuable time and helping to do a really first-class job.



BETHLEHEM STEEL COMPANY

IN 194? -

*Please, Sir,
have you an Order?*



MONCRIEF NO. 16
FORCED AIR FURNACE



MONCRIEF SERIES C
CAST FURNACES

★ In nineteen forty something or other — we hope it's 1943 — a Moncrief salesman will be at your desk asking for orders; and you, too, will be looking for business again.

When present conditions are a thing of the past, your successful operation is going to depend on having the best all around line of furnaces and winter air conditioners you can find. We want you to remember that Moncrief is going to have it for you. That is the reason we are running this advertisement now.

During these trying times, we are doing three things:

1: Producing for Victory to the limit



of our facilities.

2: Caring for Moncrief customers the best and fairest way possible.

3: Keeping right on thinking and planning to the end that every Moncrief unit shall continue to give all that is best in design, style and value.



THE HENRY FURNACE & FOUNDRY CO.

3473 East 49th Street

Cleveland, Ohio

Manufacturer of

MONCRIEF **FURNACES AND WINTER
AIR CONDITIONERS**



Call Scully

CHICAGO
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MINNEAPOLIS - ST. PAUL
NEstor 2821

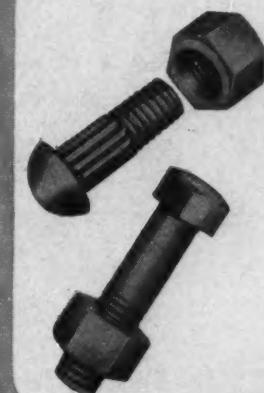
NEWARK, N. J.
Bigelow 3-5920
BERgen 3-1614 - REctor 2-6560



Let us help you *speed* war production

ALTHOUGH our stocks of steel are not what we wish they were, what we have can be yours in a hurry—subject, of course, to priority restrictions. If we don't have what you need, we will do everything possible to help you find a source of supply. Our first job, like yours, is to do everything we can to speed production that will help win the war.

"Scully Service" is on the job—in all of our eight conveniently located warehouses—day and night. Be sure to try Scully—see our phone numbers at the left. Cut out the number of the warehouse nearest you and paste it in a handy spot.



IN STOCK! **DARDELET "RIVET-BOLTS"**

We can offer immediate shipment of both Dardelet "RIVET-BOLTS" and Dardelet Machine Bolts. These bolts save valuable time and labor and assure permanently tight joints.

The Dardelet "RIVET-BOLT" is a ribbed bolt with Dardelet self-locking thread, and is widely used for field erection of structural steel. Has recessed nut. Bolt is driven in and nut is applied with wrench. Economical and strong.

The Machine Bolt with Dardelet self-locking thread is for general use where vibration is present.

SCULLY STEEL PRODUCTS COMPANY

Distributors of Steel and Steel Products

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ST. PAUL-MINNEAPOLIS • CLEVELAND • PITTSBURGH • BALTIMORE

UNITED STATES STEEL

HEAT-RITE Registers



For single unit houses or multi-family houses in defense group house projects, where simple warm air piped heating systems are specified, the Heat-Rite is an economical and efficient register. It is up-to-the minute in appearance, and its fin type grille gives a slightly downward directional flow, with abundant open area. Heat-Rite Registers are also ideal for remodeling and replacement uses. Furnished in DuraTone lustrous finish if desired. Use them on your remodeling and conversion jobs.

*to suit
small
LOW-COST
HOMES
of all types*



For small dwellings heated by floor furnace with single register, use the heavy duty Auer DuraBilt Model Floor Grille in the proper size. There are many other moderately priced Auer Registers—such as the Classic "6000" Line and the Airo-Flex "7000" Line—which are highly suitable for low-cost homes.

Write for your copy of complete Auer Register Book showing all registers and intakes for warm air and air-conditioning purposes.

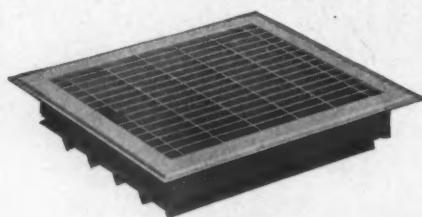
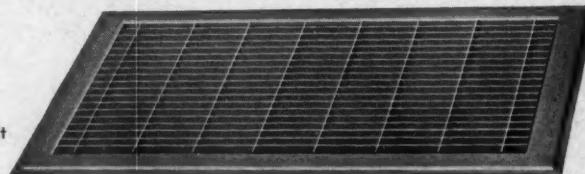


Fig. DR DuraBilt
Floor Register

Fig. DSC DuraBilt
Intake



THE AUER REGISTER CO., Cleveland, Ohio

AUER REGISTERS & GRILLES · For Air Conditioning and Gravity

Sailor—

WE EARNED THE NAVY "E"



Our pledge to the Navy

To the United States Navy and to the Nation, we of American Blower pledge the unstinted devotion of our experience, our ability, our effort. Whether destined for use on the battle lines, or to equip other essential industries for production of vital material—the products of our efforts, we pledge, will continue to measure up to the standard of excellence that is worthy of the commendation,

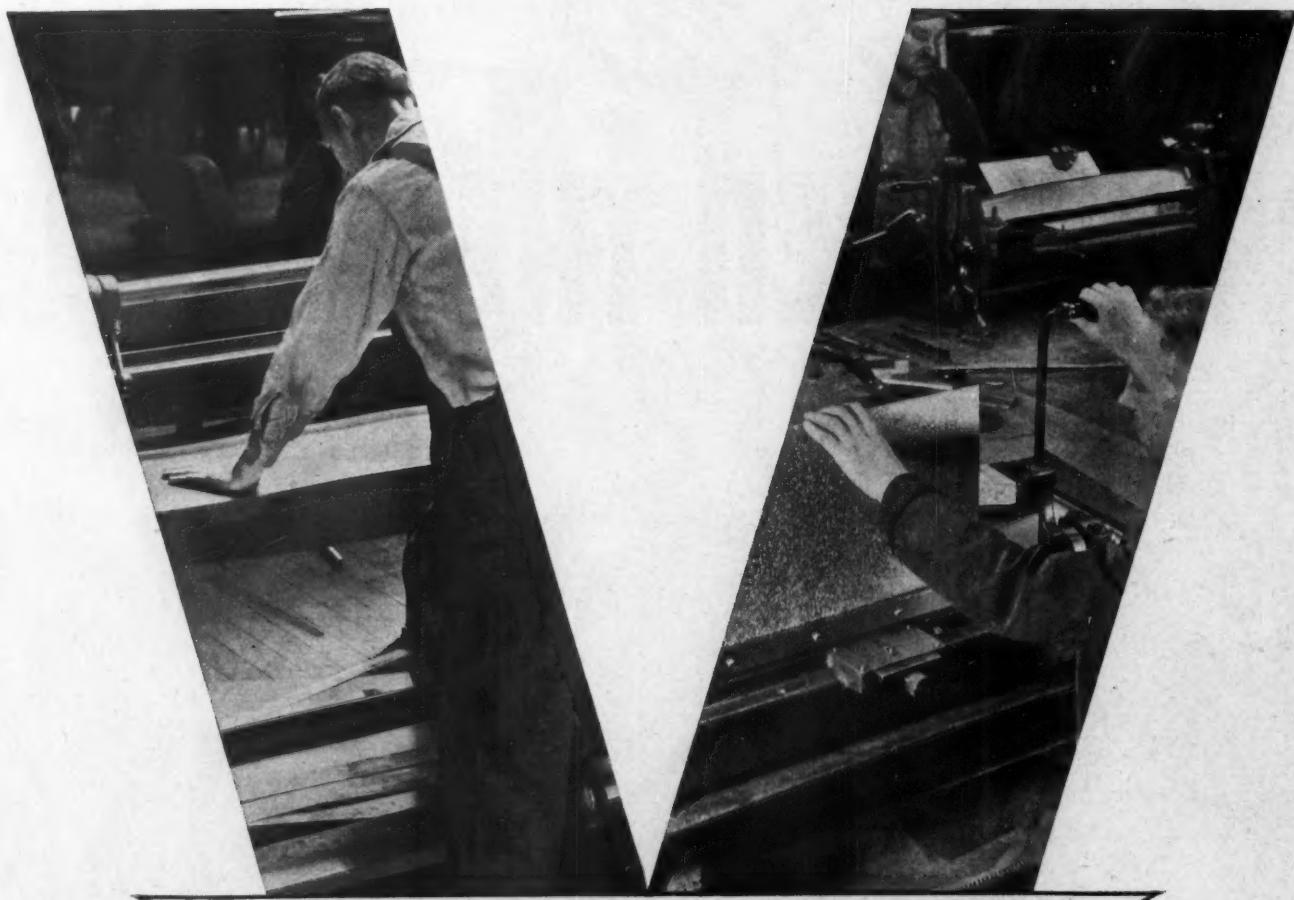
"Well Done." We are proud of the privilege of working under the Navy "E" burgee—proud to wear the insignia conferred on us. By our progress in production, we shall continue to demonstrate our patriotism and determination to win. We are mindful of our responsibilities. We are working, and shall continue to work, for Victory!



AMERICAN BLOWER

AMERICAN BLOWER CORPORATION, DETROIT, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO

Division of AMERICAN Radiator and "Standard" Sanitary Corporation



MACHINERY and dogged determination to achieve success are two of the factors which have made our nation great. And they will help keep it so by enabling American industry to maintain production supremacy in today's highly mechanized method of warfare. Thus will the victory and peace be won which all of the world is so earnestly seeking.

You and we of the metal working industries are gradually getting into full swing on war work. The machinery in our shops . . . the shears, presses, brakes and even the hand tools . . . are now being used to produce the countless accessory products necessary to our country's war effort and victory. Let's keep up the pace! Let's make sure that our nation . . . made great by hard work . . . remains ours!

ROOFING
MATERIALS

SHEET
METALS

TOOLS AND
MACHINERY

THE J. M. & L. A.
OSBORN CO
CLEVELAND, OHIO
BUFFALO • CINCINNATI • DETROIT
Manufacturers—Distributors of Metals and Metal Products

A DEPENDABLE SOURCE OF SUPPLY FOR 83 YEARS



Maybe We're Over the Hill On Regulations

If, when you open this issue, your inclination is to skip over the "solid text" of the front of the issue to reach the "pictures" farther back, let us urge you to reconsider. Pick out a quiet spot and read the "front matter" carefully.

Because the month of June marked, to our way of thinking, a very important change in the regulations we operate under.

It is our impression that the interpretations and amendments to existing orders, the official answers to questions we have been asking and, most important of all, the new Priority Regulations 10 and 11 definitely mark a change in the overall picture.

We don't mean that sheets will be easier to get. Nor that we can now resume "business as usual." Nor that equipment like furnaces will be as plentiful as in boom times.

What we do mean is that Washington now seems decided to make our procedure under regulations simpler and easier; to cut the amount of paper work required; to establish definitely just how many furnaces, how much sheet, how much equipment we can expect to get.

These trends are indicated, we think, first in Priorities Regulation 11 which places every user of more than \$5,000 worth of material quarterly under an end use preference and secondly, Priority Regulation 10 which, for the first time, attempts to allocate critical materials by need rather than by scramble.

Further evidence of simplification is shown in Priorities Regulation No. 3 which reduces paper work in extending ratings. Also in the simplified PD-25A where a number of sections have been removed as no longer necessary.

In June, also, WPB undertook to answer the many questions on L-79, L-63, L-41, P-84, and have issued official answers which the industry

will welcome. These answers are published; likely you will find here the answers you have been asking government speakers and salesmen.

It is a hopeful sign that Washington is now able to officially answer our questions on these orders. When questions cannot be answered it is a pretty good sign that the agency concerned is also confused and that no official decision has been made. When the questions can be answered publicly it shows that these same questions have been asked many times and some decision arrived at. In the end this means that uniformity has been reached and that the question has been threshed out and decided. We suggest, then, a study of these answers.

In the final analysis these decisions, simplifications and changes in procedure may not add up to any more business for our industry and others. We wish they might, but as a part of the construction industry we must do without in order that armaments can win the war.

The hopeful thing, though, is that if procedure is simplified, if red tape is cut, if we get yes or no to our questions we should be able shortly to plot our course feeling that we know what to do. All the time we have spent lately wondering what "Washington is going to think of next" and all the time we have spent in dashing from office to office or writing letters to find what we can do, we can from now on spend in intelligent planning.

We can use this time in digging up prospects; in finding things we can buy and sell; in laying out maintenance services which will keep our customers satisfied for the duration; we can even give some time to obtaining a greater net profit from our total volume.

We hope we are right in this analysis. Certainly this industry has spent precious hours in "stewing" which we may now be able to spend in making a living.

Interpretations, Amendments, Easements To Existing Orders

Forced Air Furnaces Are 'Furnaces' Under L-79

June 26, 1942

American Artisan:

We have your June issue of the AMERICAN ARTISAN and note that in one instance, you have incorrectly interpreted the provisions of Limitation Order L-79 as Amended.

On page 20, entitled "L-79 (The Freeze Order) has Been Amended," you state that forced air furnaces may be sold with or without priority rating, except oil furnaces which are mentioned specifically in the new order. This interpretation is incorrect, since just the reverse holds true. Oil furnaces may be sold under certain conditions, while forced air furnaces may not be sold without priority ratings.

We trust the above information will help you in further interpreting this Order.

Signed J. T. Kelly, Jr., Chief
Distributors' Section.

Mr. J. T. Kelly, Jr.
Chief Distributors' Section,
Plumbing and Heating Branch,
War Production Board

This acknowledges your letter of June 26 referring to the article on page 20 of the June AMERICAN ARTISAN. Our interpretation of L-79 is that an oil burning furnace is specifically mentioned under Section 2, IV, and must, therefore, be sold under a priority rating of A-10 or better. This we so stated under Winter Air Conditioners.

Forced air furnaces are not specifically mentioned in the amended L-79 and the ruling of Chicago WPB is that anything not mentioned automatically returns to its status prior to L-79, which in this case means that forced air furnaces in stock or made up by the manufacturers may be sold without any priority rating.

I still believe this is correct, but if not, I shall be glad to have a letter from you, to be published in the July issue, giving the official Washington interpretation on these two items.

To appear in the July issue, we should have the letter by July 8.

J. D. Wilder, Editor.

July 6, 1942

American Artisan:

This acknowledges your letter of July 3, 1942, to Mr. Kelly in reference to an article on page 20 of the June issue of "AMERICAN ARTISAN."

Your statement is correct in that section (a) (2) (iv) covers oil burning furnaces and therefore a priority rating of A-10 or better is required. However, I would call your attention to paragraph (b) (3) (i), which permits the sale of such equipment without a rating, under certain circumstances.

Paragraph (a) (2) (iv) restricts the sale of warm air furnaces. Such warm air furnaces may be either of the gravity or forced air type, but in either case, they are warm air furnaces and are restricted by the

Order. Therefore, it would not be correct to assume that forced air furnaces are not restricted by the Order.

Signed W. Walter Timmis, Chief
Plumbing and Heating Branch.

Used Material Under L-41

INTERPRETATIONS of Conservation Order L-41 (the control over building order which makes authorization necessary by WPB to begin residential construction costing \$500 or more; agricultural construction costing \$1,000 or more; industrial construction costing \$5,000 or more in a twelve month period) announced June 6 contains one very important change affecting our industry.

This change by interpretation covers the use of *used* material.

Suppose a factory owner wishes to revamp his ventilation or material collecting system. The cost, you tell him, will be \$9,000. Since this is above the \$5,000 industrial ceiling it is necessary for the owner to obtain permission from WPB to let the contract, *if all new material and equipment is used*.

Assume, for purposes of example, that of the \$9,000 labor is \$4,000 and material and equipment \$5,000.

Further assume that you decide about one half of the old pipe work can be used with some labor alteration and one of the two old fans can be used by cleaning it up and installing two new bearings.

Under the new interpretation, the old material (piping) and the old equipment (fan) do not count and can be used without authorization so that instead of a \$9,000 contract which requires approval you really have \$2,500 of new material and equipment plus labor on new material.

Yes, the labor required to take down, alter and re-install the old material and equipment does not count so the labor you add to the \$2,500 of new equipment is approximately \$2,000. The total, then, is \$4,500 which, being less than \$5,000 permits the owner to do his work without obtaining permission from WPB.

Used material and used equipment may *not change ownership*.

This new ruling may be important to many factory owners who are not essential war producers, but who still are busy and want to remodel or alter but can't qualify for all new material and equipment.

Manufacturers, Distributors Can't Use PD-1A

WPB has announced that distributors, wholesalers, and jobbers should *not* make any application for priority assistance on Form PD-1A, regardless of whether scarce articles are covered by Supplies' Limitation Order L-63, or not.

(Interpretation 1 of P-84)

THE following official interpretation has been issued by the Director of Industry Operations with respect to—1022.1 Preference Rating Order P-84.

Subparagraph (b) (3) of Preference Rating Order P-84 reads as follows:

(b) * * *

(3) "Emergency repairs" means only those remedial repairs which are required by actual or imminent breakdown of plumbing equipment or heating equipment. It includes (but is not limited to) the emergency replacement of equipment which is worn out, damaged beyond repair or destroyed. It does not include the installation of superior type equipment to replace usable equipment, or a substitution more extensive than that which is necessary to replace the part or parts that are worn out, damaged or destroyed.

Interpretation:

Within the meaning of this subparagraph, plumbing equipment or heating equipment which replaces "the part or parts that are worn out, damaged or destroyed," need not be identical with the part or parts that are replaced.

Installation of a part or parts which do not contain a greater weight of metal than the part or parts replaced is not "a substitution more extensive than that which is necessary to replace the part or parts that are worn out, damaged or destroyed," regardless of the fact that such plumbing or heating equipment is of a type or kind different from that replaced. Thus, coal burning equipment may replace oil burning equipment or gas burning equipment.

Further, where steel equipment is replaced by cast iron equipment, the substitution is not "more extensive" even though the substituted equipment be heavier than that replaced. Similarly a substitution of iron or steel equipment for copper or copper base alloy equipment is not a "more extensive" substitution even though the substituted equipment be heavier than that replaced.

Products Released From L-63

A large group of slow-moving, non-critical building materials is specifically released from the restrictions imposed by Suppliers' Inventory Limitation Order L-63, under the terms of Exemption No. 5 to the order.

Dealers holding stocks of these materials need no longer include them in the records and reports called for by L-63, although they remain subject to the inventory restrictions of Priorities Regulation No. 1: Products in our industry are: Gypsum Products, Bituminous Roofing Materials, Insulation Board, Acoustical Materials, Mineral Wool.

Stokers May Be "Assembled"

WAR PRODUCTION BOARD on June 4 acted to speed the conversion of oil-burning equipment to coal by permitting the assembly of small stokers from materials which were in manufacturers' hands on May 31.

Permission to assemble small coal stokers is contained in Amendment 1 to Limitation Order L-75. The original terms of the order ended the production

of such stokers on May 31. The amendment permits the assembly until September 30 of small stokers composed wholly of fabricated parts in a manufacturer's physical possession on the former cut-off date.

The Plumbing and Heating Branch estimates that about 8,000 stokers will be assembled under the terms of the amendment.

All stokers have recently been released from the "freeze" provisions of Limitation Order L-79, making an estimated 70,000 units available for conversion purposes. The possibility of allocating sufficient amounts of pig iron and scrap metal for the manufacture of grates is being studied. A number of foundries are already producing a special pattern of grate designed to fit all types of small furnaces and boilers.

At the same time, W. W. Timmis, Chief of the Plumbing and Heating Branch, announced the creation of an Operations Section which will continue an overall study, underway in the Branch for some time, of the various problems involved in the conversion of oil burners to use of other fuels.

The new Operations Section of the Branch, which will be headed by Henry S. Norris, of Adamstown, Md., will have the major responsibility of handling the demand for stokers, grates, and other equipment needed for conversion to coal.

The Operations Section will handle appeals from limitation orders concerning the plumbing and heating industry, and will also be responsible for special assignments, including the continuance of the simplification program.

New Appeal Procedure For M-126

APEALS by manufacturers for relief from restrictions imposed by General Conservation Order M-126, which banned the use of iron and steel in the production of hundreds of common civilian articles, will now be passed upon by a new Appeals Branch (see explanation of Priority Regulation No. 11 in this issue) set up within the Bureau of Priorities, now in Washington, to handle all requests for exceptions to conservation and limitation orders.

For the time being, the Appeals Branch will consider only requests from firms affected by M-126. Later, it will take over the handling of appeals from manufacturers covered by certain other conservation and limitation orders, but in the meantime all queries and requests concerning these should be addressed, as formerly, to the appropriate material or industry branch.

Appeals from the terms of General Conservation Order M-126 must continue to be made on Form PD-437 and filed with the nearest WPB field office, together with any additional evidence which a manufacturer who considers himself subjected to undue hardships believes would be helpful to his case. After a preliminary processing in the field offices, the appeals will be forwarded to Washington for final decision.

Communications concerning M-126, other than the filing of appeals, should now be addressed to the Appeals Branch, Bureau of Priorities, War Production Board, Washington, D. C.

In general, granting of appeals will be considered only after it has been determined that no other adequate relief is available to the applicant. Relief available in many cases without granting an appeal from the terms of a WPB order includes:

(Continued on page 92)

Priority Questions and Answers

L-79

THE following explanations of General Order No. L-79 (Plumbing and Heating Equipment) as Amended on May 23, 1942, to relax some of the restrictions of the original Order, have been issued in question and answer form by the Plumbing and Heating Branch of the War Production Board.

Are the following items *restricted* by the definitions of the Order:

- Q. Breeching, flue pipe, air ducts and fittings?
A. No.
- Q. Is a plumber or contractor construed to be an ultimate consumer?
A. No.
- Q. Is damaged or defective new equipment considered to be "used"?
A. No. It is still new material.
- Q. May the materials covered by the definitions be sold at public auction?
A. Yes, if sold to a person other than an ultimate consumer.

Q. May a manufacturer sell new metal heating equipment to a wholesaler without an A-10 or better rating?

A. Yes. He may sell without restriction to anyone one except an ultimate consumer.

Q. May a wholesaler or jobber sell new metal heating equipment to a retailer without an A-10 or better rating?

A. Yes, he may sell without restriction to anyone except an ultimate consumer.

Q. May a person replace an existing oil fired furnace or boiler, with a coal burning furnace or boiler, or add a separate unit under paragraph (b) (8)?

A. No. This paragraph covers only parts for conversion.

Q. May orders undelivered as of April 16, 1942, be filled?

A. Yes, if they were bonafide orders booked prior to April 17, 1942, provided delivery is made not later than June 30, 1942.

Q. May new heating equipment be installed under paragraph (b) (6) without a rating if there is no such equipment available currently in the building?

A. This exception applies only to cooking stoves, heating stoves, and water heaters, and is limited to a place of residence. The customer must sign the certificate specified in Order L-79 as Amended.

Q. Is the sale of an oil storage tank excepted if specific appeal under M-68 has been granted?

- A. No.
- Q. Are demonstrator items classed as used?

A. No.

Q. Is the sale of gas burning warm air furnaces restricted?

A. No. Only coal or oil burning furnaces are restricted.

Q. Paragraph (g) provides that a person may appeal for relief from the terms of the Order. What forms are necessary for this purpose?

A. There is no specific form to be used. The Order states "may apply for relief by addressing a letter to the War Production Board." However, this letter

should contain all of the following information: Name and address of the person desiring to purchase, name and address of the person from whom the equipment will be bought, the items to be bought, and the reasons why the appellant feels he is entitled to relief. Note: Only items restricted by the terms of the Order should be listed as other items may be bought freely.

Q. What is the correct definition of "space heaters" as used in Order L-79?

A. "Space heaters" as used in L-79 as Amended, means any above the floor device, except unit heaters, using coal, oil or gas as fuel for the direct heating of the space in and adjacent to that in which the device is located, designed for use without heat distribution pipes or ducts as integral parts of such heating devices.

Q. Is the sale of coal burning boilers and coal burning furnaces restricted?

A. Yes.

L-63

SUPPLIERS Inventory Limitation Order L-63 (see May AA, page 31), is the order which limits the inventories of certain listed kinds of supplies carried by branch warehouses, wholesalers, distributors, jobbers, dealers and retailers. Form PD-1X is the only form on which *dealers who buy directly from a producer* may apply for priority assistance in the acquisition of goods for resale. Its use includes, but is not confined to, application for assistance in securing the articles listed in Suppliers' Inventory Limitation Order L-63, as amended from time to time.

Some Interpretations

Q. Who may file for priority assistance on PD-1X?

A. Distributors, jobbers, wholesalers, or retailers who purchase their material directly from the producer. If a rating is assigned under PD-1X, the rating may only be applied to orders placed directly with a producer. For materials not purchased directly from a producer, the applicant should place his order through his customary wholesale channels and the wholesaler, if necessary, will make application for assistance on PD-1X.

Q. When does a distributor use PD-1X and when does he apply for assistance on PD-1A?

A. PD-1X is the only form on which a distributor may apply for priority assistance to secure merchandise which he re-sells. PD-1A may only be used by a distributor when applying for service or operating equipment and supplies for use in his own establishment.

Q. May a retailer apply for ratings on materials on PD-1X?

A. Yes, but only for materials which he has customarily purchased from a producer.

Q. Is there any minimum figure on the dollar volume of business which a distributor must do before he may make application on Form PD-1X?

A. No. Any distributor who purchases his supplies directly from a producer may use PD-1X for

the allowable materials regardless of his dollar volume of business.

Q. How may the rating assigned on PD-1X be extended?

A. By endorsement, as prescribed in Priorities Regulation No. 3.

Q. Can a distributor apply the rating authorized by the PD-1X certificate to purchase orders to more than one manufacturer?

A. Ratings assigned for specified quantities of materials may be applied to any number of purchase orders placed with different suppliers, provided that the total quantity of material to which the rating is applied is not greater than the total amount authorized.

Q. If a jobber qualifies under the seasonal sales requirements, may he purchase seasonal goods at any time, or must he wait until the season arrives?

A. He may purchase and store seasonal goods in advance of the season on two conditions:

1. That he makes his purchases in the same season which he made like purchase in the previous year, and
2. That the amount of such purchase shall not exceed the amount he purchased in the peak period, not to exceed 90 days, of the comparable period of the previous year.

Q. May a distributor use Form PD-1X to secure a rating on materials which he knows will be sold without a rating?

A. Yes. Ratings will probably be given on certain essential materials, providing that the use of these materials is considered important to war or civilian needs.

Q. Is it necessary to keep a perpetual inventory or take a physical inventory in order to fill in Form PD-336, and to furnish the information required by PD-1X?

A. The distributor need not take a physical inventory each month and he need not keep a perpetual inventory unless he so desires. He may compute his records in the following manner: Use the total dol-

lars of sales in the month (excluding direct shipment) and then compute the cost of those sales, based on the average gross margin of profit in order to arrive at the cost of the sales made. A comparison of the arrived-at figure with the total dollars of purchase bills for materials received (excluding direct shipments) will indicate whether a gain or loss has been made in inventory during the month. The gain or loss can then be added to or subtracted from the starting inventory figure, giving a total figure for the end of the month.

Q. Must a business departmentalize in order to comply with L-63 and properly fill in PD-1X?

A. The types of supplies listed on Form L-63 are supplies that are considered critical due to shortages of raw materials. It is not necessary that a distributor departmentalize his business into departments exactly as listed on the form. Wherever possible, a distributor should departmentalize his business, but the over-all inventory can be indicated on Report Form PD-336. Where the distributor is not departmentalized, he will have to consider all items stocked in his business as under the inventory of a department, or the over-all business. Example: A hardware distributor might possibly carry a few pipe fittings and he could consider these pipe fittings in his hardware department, although they would ordinarily be classed as plumbing and heating supplies.

Q. Are items purchased on preference ratings, being held in stock for customer's call, to be combined with the inventory of supplies controlled by Order L-63?

A. Yes.

Q. A distributor has a total inventory in excess of the maximum permitted by L-63, but is short, or out of stock, in certain lines. May he replenish his supplies of the short items?

A. Yes. Amendment No. 2 to L-63 permits him to accept deliveries of specific items in which he is short up to a total dollar volume equal to his sales of the items during the preceding month.

Heating Inspectors Wanted For Army Camps

SEVERAL issues back we published an announcement that the army wanted to hire inspectors to supervise the operation of warm air furnaces in army camps. Many readers tried to get a job by applying at camps in their area or to army corps area offices only to be told that the army knew nothing about such jobs, so apply to civil service.

Now we are authorized to announce that during the summer two types of jobs will be open to applicants. The procedure will be for you to send us your name and complete address. Give us your age. Tell how many years you have been in the heating business. State whether you are willing to go anywhere in continental United States or must stay close to home.

These names will be sent to the proper authorities in Washington. Washington will classify the names and send qualified names to army corps offices or camps where the final hiring will be done.

The first class of inspector will be "Chief Heating Inspector." Salary \$2400 to \$2800 per year. You must pay your own board and room out of this. Age 45 to 50. Between 300 and 400 needed. These in-

spectors will be used at the big camps and will have under them Inspector Mechanics. They will keep certain records, must know how to adjust and service controls, filters, humidifiers, take CO₂ readings.

The lower class will be "Inspector Mechanic." Salary \$1680 to \$1840 per year. You must pay your own board and room out of this. Age 50 to 65. Between 2000 and 3000 needed. These inspectors will directly instruct soldiers in how to fire. They will supervise the firing of a certain number of furnaces (probably 40 to 50). They must be physically able to get to the furnaces in any weather. They must be able to fire, repair (like change grate bars), change filters, set and adjust controls, check wiring. They will have to overhaul the furnaces in summer. They will have to keep daily, weekly, monthly reports.

No physical examination will be made for either group other than a cursory one.

If you do not wish to apply through AMERICAN ARTISAN your furnace manufacturer will probably take the application.

Priorities Regulation No. 3

Under this order you extend or apply your preference ratings by a simple certification. You no longer extend actual copies of priorities.

THE use of preference ratings has been simplified and standardized by the terms of an amendment to Priorities Regulation No. 3.

Effective July 1, any preference rating, *no matter how it has been assigned*, may be applied or extended by a single form of certification, which states merely that the purchaser certifies to the seller and to the War Production Board that he is entitled to use the preference ratings indicated on his purchase order, in accordance with the terms of Priorities Regulation No. 3.

Provisions of existing orders which require a purchaser to furnish his supplier with copies of preference rating orders or other special certifications are all rescinded, except for the special provisions of Priorities Regulation No. 9 with respect to the application of preference ratings for certain types of exports.

In addition to the standard certification, orders on which a preference rating is applied or extended after July 1 must also include the identification symbols required by Priorities Regulation No. 10, which established the Allocation Classification system.

The amended Regulation No. 3 restricts extension of preference ratings, in most cases, to material which will be delivered to, or physically incorporated in a product delivered to the person to whom the rating was originally assigned, or which will be used to replace in inventory materials so delivered, subject to definite limitations. A rating may not be extended to replace materials in inventory except to the extent necessary to restore the inventory to a practicable working minimum. No rating higher than A-1-b may be assigned to orders for replacement of materials in inventory, even though the order for which the materials were used may have carried a higher rating.

Special provision is made for small manufacturers not operating under the Production Requirements Plan. Such producers may extend ratings to deliveries of operating supplies including lubricants, small perishable tools, etc., which are required and will be consumed in filling the rated order which they are extending, but the cost of such operating supplies must not exceed 10% of the cost of the materials to which the rating is extended and which such supplies are used to process. Not more than 25% of the operating supplies obtained in this way during any month may be metals in the forms described in the Metals List of Priorities Regulation No. 11.

Following are important sections of the order:
944.23, Priorities Regulation No. 3, is hereby amended to read as follows:

944.23 Priorities Regulation No. 3

(a) **Definitions.** For the purposes of this Regulation:

- (1) "Person" means any individual, partnership, association, business trust, corporation, governmental corporation or agency, or any organized group of persons, whether incorporated or not.
- (2) "Material" means any commodity, equipment, accessory, part, assembly or product of any kind.

(b) **General Provisions.**

- (1) Except to the extent otherwise provided in Priorities Regulation No. 11 (Production Requirements Plan), any person may apply a preference rating assigned to him by any preference rating certificate or preference rating order issued to him in his name or as one of a class, and any person may extend any rating which has been applied or extended to deliveries to be made by him, subject to the provisions of this regulation.
- (2) Preference ratings may be applied by the person to whom they are assigned only to the specific quantities and kinds of material authorized, or to the minimum required amounts of material when no specific quantities are authorized. Ratings which have been applied or extended by others to deliveries to be made by a person may, subject to the provisions of this Regulation, be extended by such person in order to obtain not more than the same amount and kind of material (except as specified in paragraph (c) (2) of this Regulation) which he has delivered or is required to deliver pursuant to such ratings.

(c) **Extension of Ratings.** The following provisions shall be applicable to all extensions of preference ratings notwithstanding any inconsistent provisions of the preference rating certificate or preference rating order assigning the rating:

- (1) Except as permitted in subparagraph (2) of this paragraph (c), no preference ratings may be extended to the delivery of any material except
 - (i) material which will itself be delivered by the person extending the rating on a delivery bearing the rating which is being extended, or which will be physically incorporated into material to be so delivered, or
 - (ii) material which is required to replace in inventory material so delivered. Material shall not be deemed to be so required if the delivery can be made and a practicable working minimum inventory of such material still retained; and if, in making delivery, the inventory is reduced below such minimum, the rating may be extended to replace such material only to the extent necessary to restore the inventory to such minimum; provided, however, that the material ordered for replacement must be substantially the same as the material replaced, subject only to minor variations in size, shape or design of substitutions of less scarce materials, which, in any case, do not substantially alter the purpose for which the same is to be used; and provided, further, that any persons who can fill out of finished inventory a purchase order bearing a rating of A-1-a or higher can only extend the same as a rating of A-1-b for purposes of replacing in his inventory material so delivered.
- (2) In addition, any person may extend a rating

to deliveries of operating supplies (including lubricants, catalysts, abrasives and small perishable tools) which are actually required and will be consumed by him in physically processing other material to the delivery of which he has extended the same rating, provided that

- (i) the receipts or withdrawals of such person from inventory during the most recent calendar quarter or his anticipated receipts or withdrawals from inventory during the current or next succeeding calendar quarter of metals in the forms included on the Metals List attached to Priorities Regulation No. 11 do not aggregate \$5,000 or more in value.
- (ii) the cost of the operating supplies to which he extends the rating does not exceed ten percent of the cost of the particular materials to be processed therewith, and to which he extends the same rating; and
- (iii) not more than twenty-five percent by value of the operating supplies so rated in any calendar month are metals in any of the forms listed in said Metals List.

(d) Method of Application or Extension

- (1) Any person authorized to apply or extend preference ratings may do so by endorsing on, or attaching, each contract or purchase order placed by him to which the rating is to be applied or extended, a certification in the following form signed manually or as provided in Priorities Regulation No. 7 (944.27) by an official duly authorized for such purpose:

CERTIFICATION

The undersigned purchaser hereby represents to the seller and to the War Production Board that he is entitled to apply or extend the preference ratings indicated opposite the items shown on this purchase order, and that such application or extension is in accordance with Priorities Regulation No. 3 as amended, with the terms of which the undersigned is familiar.

(Name of Purchaser) (Address)
By
(Signature and Title of
Duly Authorized Officer) Date

The person receiving the certification and rating shall be entitled to rely on such representation, unless he knows or has reason to believe it to be false. Each person applying or extending ratings must maintain at his regular place of business all documents, including purchase orders and preference rating orders and certificates, upon which he relies as entitling him to apply or extend such ratings, segregated and available for inspection by representatives of the War Production Board, or filed in such manner that they can be readily segregated and made available for such inspection.

(2) Such certification may be used in lieu of any other form of certification required by the terms of any regulation, preference rating order or preference rating certificate (including, without limitation, the instructions accompanying Forms PD-1A, PD-3A, and PD-25A) as a means of applying or extending a preference rating and in lieu of furnishing any copy of any preference rating order required thereby; except that the provisions of Priorities Regulation No. 9 (944.30) with respect to the method of applying (but not extending) preference ratings covering certain types of exports must be complied with when ratings are applied pursuant to that Regulation.

(3) Notwithstanding the requirements of any applicable preference rating order or certificate,

- (i) ratings of different grades and ratings assigned by different preference rating certificates or orders may be extended to different items ordered in a single purchase order, provided that the amount of each material to which a particular rating is applied is shown as a separate item on the purchase order and is not merely indicated by a percentage figure; or the purchaser may extend to all items on the purchase order, to which he is entitled to extend any rating, the lowest rating which he is entitled to extend to any such items; and
- (ii) a person may defer extending any rating for a period of not more than three months after he becomes entitled to extend the same.

(4) In addition to complying with the foregoing requirement of this paragraph (d), any person applying or extending a preference rating shall include on his purchase order or contract identification symbols as required by Priorities Regulation No. 10 (944.31) and such other information (except designation of the number or serial number of the preference rating certificate or preference rating order assigning the rating) as may be required by the terms of any applicable order of the Director of Industry Operations and which the person placing the purchase order is able to furnish.

(f) **Effect on Existing Certificates and Orders.** All existing forms of preference rating certificates issued by or under authority of the Director of Priorities or the Director of Industry Operations are continued in full force and effect, and additional certificates on such forms may continue to be issued by the persons now or hereafter authorized to issue the same until such authority is revoked or amended, subject to the provisions of this and other Regulations of the Director of Industry Operations. All certificates and all existing orders of the Director of Priorities or the Director of Industry Operations are to be deemed amended by this Regulation only where and to the extent that the provisions of this Regulation indicate that it is to control.

Tires From One Car to Another

FORMALIZING a practice that has been permitted under oral assent of the Office of Price Administration, Amendment No. 7 to Order M-15-c grants permission to switch tires from one of your cars to another.

The original order, which went into effect January 5, put certain restrictions on the commercial transfer of new tires from one place to another, but the

OPA has raised no objection when an owner of tires who was not a tire retailer, distributor, or wholesaler on December 11 wished to transfer tires that were owned by him and were in his possession prior to December 11, 1941, from one to another of his own vehicles or from one place to another on his own premises. Restrictions on "transfer" were deemed not applicable in such cases, and the amendment gives specific recognition to the exemption.

Priorities Regulation No. 11

If you use more than \$5000 worth of metal per quarter for products manufactured in your plant you will hereafter obtain material under Production Requirements Plan.

EFFECTIVE July 1 for the third quarter of 1942 and thereafter all concerns using more than \$5,000 worth of metal in a quarter are required under Priority Regulation 11 to obtain their materials under the Production Requirements Plan.

The explanation of the new regulation, as announced, is published following. So is the Regulation.

So far as the warm air heating industry (manufacturer and dealer) and the sheet metal contracting industry (fabricator, manufacturer and contractor) are concerned here are the interpretations each firm must follow:

The first thing to determine is whether or not you use \$5,000 worth of metal in a quarter.

Where Our Industry Fits

Sheet Metal Fabricator—If you are a sheet metal fabricator manufacturing in your shop products of sheet metal and you use more than \$5,000 worth of metal a quarter you must operate under Production Requirements Plan.

Suppose you are a sheet metal fabricator making machine guards, or war equipment for a prime contractor and use more than \$5,000 worth of metal a quarter—you must now operate under PRP. Suppose part of your business (but still over \$5,000) is war equipment and part is your usual contracting you should operate under PRP for all materials used. In either case this must be manufacturing in your shop, work done "at the site" is excluded (i of b, 6, ii—Priorities Regulation 11).

Furnace Manufacturers—Using more than \$5,000 worth of metal a quarter must operate under Production Requirements Plan.

A—Furnace manufacturers will not be assigned an Allocation Classification Symbol (see Priorities Regulation No. 10 in this issue). Instead furnace manufacturers will pass on to their suppliers the purchasers symbol "DP" and the priority rating assigned the purchaser.

Furnace Dealer—At the request of AMERICAN ARTISAN the Chicago WPB telegraphed Washington and asked if a furnace dealer who sells furnaces without changing their form but who also buys sheets and fabricates ducts qualifies under PRP. Washington has ruled that such a furnace dealer does qualify under PRP and must operate under PRP regardless of whether he fabricates the ducts in the shop or on the job. Of course, he must use more than \$5,000 of metal per quarter. The furnaces and other material used as bought are not counted in the \$5,000. If you can't estimate your requirements you file an interim request for additional material when you run short.

As readers will gather from a reading of the an-

nouncements and actual text following, the Production Requirements Plan is an "allocation" system whereby each industry will be judged upon its essentiality and each industry will be given its share of available materials without the previous scramble for higher and higher priority ratings.

Outline of the General Plan

The plan was announced June 10 by William L. Batt, Chairman of the Requirements Committee, WPB and J. S. Knowlson, Director of Industry Operations, WPB. They said:

"Creation by the President June 9 of a Combined Production and Resources Board to coordinate the distribution of materials and the production programs of the United States and its Allies gives the War Production Board increased responsibility for directing every available pound of material into the war program and absolutely essential civilian uses.

"Production of non-essential civilian goods has been virtually stopped for the duration of the war, and it is now necessary to exercise careful control over the distribution of materials among military and vital civilian demands such as transportation, war housing, etc.

Materials Will Be Allocated

"The general staffs of the United Nations will advise the Combined Production and Resources Board as to strategic requirements of weapons and ships. In the same way, the Armed Services of the United States and the Maritime Commission will inform the War Production Board of the types of materials and equipment most vitally needed, and their order of urgency.

"The Requirements Committee of WPB, on the basis of these statements of direct war requirements, and other information on essential civilian needs, will establish broad policies for the distribution of scarce materials. The policy decisions of the Requirements Committee, on which the Army and Navy are represented, will determine the part of the total available supplies of basic materials which can be made available in each calendar quarter to war industries and other consuming groups.

"Within these broad policy limits established by the Requirements Committee, the Bureau of Priorities will determine the maximum quantities of scarce materials which may be acquired by each individual company required to qualify under the plan in each three-month period beginning July 1. In making these determinations, the Bureau of Priorities will be guided by the recommendations of the Armed Services, and of the other divisions of the War Production Board.

"The basic instrument which will be used in this quarterly apportionment of materials to individual

companies is the Production Requirements Plan. It should be emphasized, however, that the Production Requirements Plan under this program will no longer be primarily a mechanism for the assignment of preference ratings to each applicant on the basis of the rated orders the applicant has on his books. PRP now becomes the chief means by which the War Production Board will execute general policies. The emphasis from now on will be on the end use of materials rather than on preference ratings. A classification system (Priorities Regulation No. 10) will be used to obtain information on end use to assist in controlling the distribution of metals during the fourth quarter.

"For the first time, by this means, the War Production Board will have centralized control of the distribution of materials, and will be able to relate the total quantities of materials for which preference ratings are assigned to the available supply.

"This ambitious program cannot be put into full operation in one step. For the third quarter of this year, therefore, the primary emphasis will be on the distribution and use of metals. Only companies which use more than \$5,000 worth of basic metal in a calendar quarter will be required to apply under the Production Requirements Plan for the quarter beginning July 1. A few special classes of companies, such as those engaged in transportation, construction, mining, and public utility services, will be controlled by existing procedures for the present.

"Every large user of metal will be required to obtain a quarterly authorization for all his scarce material requirements under the Production Requirements Plan. It should be understood, however, that a rating under PRP does not constitute a guarantee of delivery of materials covered by the rating. Actual shipments of critical materials now under allocation control will be governed by month-to-month directions from the War Production Board, as heretofore, on the basis of the appropriate forms required for each material.

"Pool" for Small Users

"For the benefit of companies which use less than \$5,000 worth of basic metal in a quarter, and are therefore not now required to apply under the Production Requirements Plan, a percentage of the total supply materials will be set aside, and they may obtain their minimum requirements from this reserve by use of the regular priorities procedures which have been in effect up to now.

"To prevent leaks in the program, all companies which receive certificates under the Production Requirements Plan will be prohibited, after July 1, from using or extending preference ratings assigned in any other way, except for construction, or items of capital equipment. Companies which have filed a PRP application may continue to use other ratings within specified limits until they receive their certificate, but no company using more than \$5,000 worth of basic metal in a quarter which has not filed a PRP application by July 1 may use any form of preference rating for production materials after that date.

"For the third quarter of this year, PRP is based primarily upon one form, PD-25A. This form is filled out by manufacturers as a specific application for authority to buy materials during the quarter. The PD-25A's will be reviewed and processed by the End Products Branches, including Branches of the Armed Services, within the limitations of the general policy determinations as set forth by the Requirements Committee. Specific conditions within the individual company will be taken into account, however. The PD-25A will then be returned to the applicant as an authority

to buy the amounts of material approved on the form.

"Advance overall information already has been gathered from all large metal users on their metal requirements for the third quarter. The facts learned from them, together with information on supply furnished by the Materials Branches of the War Production Board, will be used by the Requirements Committee to determine how metal use can best be distributed.

"A third part of the picture is the Allocation Classification System (Priorities Regulation No. 10) which will be started during the third quarter so that it may become an effective part of PRP during the following quarter. The Allocation System fits in as follows:

"The present PD-25A requires information on the end uses of the applicant's products. However, the applicant often has no way of determining these end uses, especially if he is a sub sub-contractor. And even when he knows the end use, he has had no standard method of stating it on the PD-25A. The Allocation System, designed to rectify this, is an end use code in numerical symbols. Numbers from 1.00 to 23.00 have been assigned to all major classes of military, industrial and civilian uses. These classifications are subdivided as necessary. For instance, class 9.00 —power, light and heat—has under it subclass 9.10, electricity; 9.20, petroleum; 9.30, coal and coke; 9.40, gas. In addition, there are Purchaser Symbols such as USN for the Navy.

PR-10 Shows End Use

"Priorities Regulation No. 10 requires that the code be used on orders placed after July 1 and on all previously placed orders calling for delivery after July 31. In this way the end use will filter down through all layers of contractors and sub-contractors to the concerns buying the basic materials.

"As a result, when the applications are made under PRP for the fourth quarter, it will be possible for each manufacturer to state exactly, in terms of the code, what proportion of his products will go to what particular end uses, such as tanks, machine tools, or airplanes.

"As previously stated, PRP grants authority to buy a definite amount of specific materials and also authorizes a lump allowance for operating supplies. Actual shipments of critical material now under allocation control still will be governed by month to month directions from the War Production Board through the "M" orders, covering the various materials. In Brief, the "M" orders continue in effect just as before, except for the substitution of the new Allocation Classification for the various classifications now used. PRP, however, is intended to reduce the problem of allocation under the "M" orders by bringing total demand into approximate balance with total supply. This will make the specific scheduling of shipments the most important function of the "M" order.

"Priorities Regulation No. 11, the legal basis of PRP, provides that in addition to companies using less than \$5000 worth of metals a quarter, the users engaged in the following nine classes of business may continue to work through the existing priority procedures:

"Transportation of any kind; furnishing of heat, light, power, electricity, gas or water to others; mining or quarrying; production, refining, transportation, distribution or marketing of petroleum or associated hydrocarbons; communications; sewerage or drainage; sale of material the user has not manufactured, processed, fabricated, assembled, or otherwise physically changed, including sales as a distributor, wholesaler, retailer, warehouse, industrial or mill supply

house or scrap dealer; extracting, smelting, refining, alloying, or similarly processing metal ores or scrap into raw metal; construction, at the site, of buildings, structures, or projects.

"A 'kitty' will be provided as a margin of safety to take care of errors in judgment or changes in overall program. In addition, the Requirements Committee will set aside a percentage of the total supply of materials for the nine exempt classes of users and for the users of less than \$5000 worth of metal a quarter. Companies in these groups will continue to use all the regular priority procedures but WPB will restrict each group of users to the proportion of the reserve created for its benefit.

"The form of applying and extending all preference ratings will be made uniform after July 1 in accordance with Priorities Regulation No. 3, as amended June 10, 1942.

"Several important priority instruments will continue to be used:

"The 'P' Orders, which eventually will be greatly reduced in number. In the immediate future, however, certain orders will continue in effect for the users of less than \$5000 worth of metal a quarter and for the special groups. For instance, P-46 for the Public Utilities, and broad orders such as P-148, the Export Order, and P-100 as it applies to concerns not covered by PRP will continue.

"PD-1A's may still be issued for capital equipment for all classes of producers, and for all requirements of the industries not operating under PRP. A PD-1A

certificate may be used to obtain a finished item from a company covered by PRP, but the rating cannot be extended by such a producer to get necessary materials for manufacture since he will be required by the terms of PRP to obtain his basic materials through that plan. Where a rating assigned on a PD-1A is served on a manufacturer outside the terms of PRP (for example, the manufacturer who uses less than \$5000 worth of metal for the quarter), the rating can be extended for the necessary materials.

"PD-3A's will be used for military requirements in almost exactly the same way as PD-1A is used. Officers of the Army and Navy will continue to assign the PD-3A certificate for the delivery of finished items. The rating then serves as a directive of delivery—the manufacturer will be required to deliver the finished item in accordance with the degree of preference rating assigned. But if the manufacturer is operating under PRP he cannot get materials for production by extending the rating. Instead, he will rely on PRP. (The degree of Preference Rating and the end use code assigned to the finished items will show up in the manufacturer's application under PRP for the next quarter.)

"Project Ratings (P-19 Series) will continue to be used for practically all building or construction activities with the usual exceptions of a limited amount of military construction and certain classes of housing.

"Limitation (L) and Conservation (M) Orders will continue to govern the things a manufacturer cannot make even though he may be able to get the material."

TITLE 32—NATIONAL DEFENSE
CHAPTER IX—WAR PRODUCTION BOARD
Subchapter B—DIVISION OF INDUSTRY OPERATIONS
PART 944—REGULATIONS APPLICABLE TO THE
OPERATION OF THE PRIORITIES SYSTEM
Priorities Regulation No. 11
Production Requirements Plan

§944.32 Priorities Regulation No. 11. (a) Purpose. It is the purpose of this Regulation to provide for the integration of the system of distributing scarce materials in the interest of the war and the maintenance of the essential civilian economy by requiring principal industrial users of scarce materials to qualify under the Production Requirements Plan and to obtain preference rating assistance primarily under that Plan.

(b) Definitions. For the purpose of this Regulation:

- (1) "Person" means any individual, partnership, association, business trust, corporation, governmental corporation or agency, or any organized group of persons, whether incorporated or not.
- (2) "Material" means any commodity, equipment, accessory, part assembly or product of any kind.
- (3) "PRP Application" means an application for priority assistance under the Production Requirements Plan on Form PD-25A or any other prescribed form.
- (4) "PRP Certificate" means the copy of the PRP Application which has been returned to the applicant by the Director of Industry Operations with an assignment of preference ratings or other priority action endorsed thereon, and includes any supplementary certificate which may be issued from time to time.
- (5) "PRP Unit" means any person who is qualified under the Production Requirements Plan by the issuance to such person of a PRP Certificate. In case the certificate is issued to a branch, plant, department, or other division of a corporation or business, "PRP Unit" refers only to the portion of the business to which the certifi-

cate is issued.

- (6) "Class I Producer" means any person (or any branch, plant, department or other division of a corporation or business which operates as a separate entity and maintains a separate inventory) whose receipts or withdrawals from inventory during the most recent calendar quarter, or whose anticipated receipts or withdrawals from inventory during the current or next succeeding calendar quarter, of metals in the forms included on the attached Metals List aggregate five thousand dollars or more in value, except
 - (i) any agency of the United States, of any foreign government, of any state or territory, or of any subdivision thereof except when and to the extent that any such agency is engaged in the manufacture of commodities or other materials (such as shipyards, arsenal prison factories, etc.); and
 - (ii) any person to the extent that he is engaged in the business of:
 - (a) Transportation by any means;
 - (b) Furnishing of heat, light, power, electricity, gas or water to others;
 - (c) Mining or quarrying;
 - (d) Production, refining, transportation, distribution or marketing of petroleum or associated hydrocarbons;
 - (e) Communications;
 - (f) Sewerage or Drainage;
 - (g) *The sale of material which he has not manufactured, processed, fabricated, assembled, or otherwise physically changed, including sales*

as a distributor, wholesaler, retailer, warehouse, industrial or mill supply house or scrap dealer;

(h) Extracting, smelting, refining, alloying, or similarly processing metal ores or scrap into raw metal.

(i) Construction, at the site, of buildings, structures, or projects.

[Editor's Note—Section g and i exempt many forms of sheet metal contracting, but not the large furnace dealer.]

(7) "Assignment" of a preference rating means the granting to any person, by order of certificate issued by or under authority of the Director of Industry Operations, of the right to use such rating.

(8) "Application" of a preference rating means the use of the rating by the person to whom it is initially assigned by or under the authority of the Director of Industry Operations.

(9) "Extension" of a preference rating means the use of the rating by any person to whom it is applied or extended by another person.

(c) **Persons Required to Qualify Under PRP.** Each Class I Producer shall file a PRP Application not later than June 30, 1942. Each person who thereafter becomes a Class I Producer shall file a PRP Application before the end of the Calendar Quarter in which he becomes such. The Director of Industry Operations may specifically require other persons to file such applications from time to time, and may also exempt particular Class I Producers from the requirements of this paragraph or extend their time for filing PRP Applications. Any other processors of materials desiring priority assistance on a quarterly basis may also, with the consent of the Director of Industry Operations, qualify under the Production Requirements Plan, although not required to do so by this Regulation.

(d) **Restrictions on PRP Units.**

(1) After June 30, 1942, except as provided in subparagraph (2) of this paragraph (d):

(i) no PRP Unit shall apply any preference rating to deliveries of any material other than those authorized on its PRP Certificate; and no PRP Unit shall extend any preference rating which has been applied or extended to it by any other person.

(ii) No PRP Unit shall accept deliveries (whether rated, unrated or allocated) of any material included on the Materials List specified in its PRP Application form, or of any material not on such list for which it requested priority assistance on its PRP Application, in excess of the quantity specifically rated or otherwise authorized by its PRP Certificate; provided that this restriction shall not prevent the acceptance of delivery when priority assistance is denied on the express ground that such material can be obtained without such assistance.

(iii) Each PRP Unit, immediately upon receipt of its PRP Certificate, shall cancel or reduce its outstanding purchase orders calling for delivery within the quarter covered by such Certificate to the amount of its actual requirements as rated or otherwise authorized on such Certificate or any previous PRP Certificate and not yet received; provided, however, that no person shall be required to cancel any order calling for delivery in the third quarter of 1942 of any metal in any form included on the attached Metals List, if the Producer thereof certifies in writing to such person that substitution of other orders is impossible and that cancellation would disrupt the pro-

ducer's production schedules and result in diminished production; in such case delivery may be accepted under such order without regard to the restrictions of paragraph (d) (1) (ii).

(2) (i) The restrictions of subparagraph (1) of this paragraph (d) shall not prohibit a PRP Unit from making application on the appropriate form (PD-1A) for priority assistance for delivery of materials for plant expansion, construction, or acquisition of items of capital equipment and, if authorized, applying ratings to and receiving delivery of such materials.

(ii) To the extent provided in paragraph (e) of this Regulation, the restrictions of subparagraph (1) of this paragraph (d) shall be inapplicable during the interim period therein referred to.

(iii) Said restrictions shall also be inapplicable in any other case where the Director of Industry Operations may grant specific written authorization for the application or extension of a rating or the receipt of materials. Such authorization will be issued by or under the authority of the Director of Industry Operations and will specifically refer to this Regulation and may grant an exemption from its terms covering particular persons or classes of persons, or particular transactions or classes of transactions.

(iv) Each PRP Unit shall, so far as practicable, place its purchase orders for the material rated or otherwise authorized on its PRP Certificate so as to call for substantially equal deliveries during each of the three months of the quarter, and shall in no event, unless absolutely necessary to maintain its delivery schedule or to obtain the minimum quantities practicably procurable, order for delivery during the first month of the quarter more than 40%, or during the first two months of the quarter more than 80%, of the total quantity of any material authorized for rating during the quarter.

(e) **Interim Procedure for Class I Producers.** Any Class I Producer who is not in default in filing his PRP Application but has not received his PRP Certificate may apply or extend preference ratings for delivery during the third quarter of 1942 as follows:

(1) If he has been operating under the Production Requirements Plan, he may apply the same preference ratings he was authorized to apply during the second quarter of 1942 to not more than 40% of the amount of each material which he has indicated on his PRP Application as his anticipated requirements for the third quarter.

(2) If he has not been operating under the Production Requirements Plan, he may continue to apply and extend ratings under any applicable preference rating orders or preference rating certificates in the same manner as permitted prior to July 1, 1942; and, notwithstanding the termination of any preference rating order on or after June 30, 1942, the same shall be deemed to continue in effect as to any such person until he receives his PRP Certificate; provided, however, that he shall not apply or extend ratings to the delivery in the third quarter of 1942 of any material in an aggregate quantity greater than 40% of the amount of such material which he has indicated as his anticipated requirements on his PRP Application for that quarter, subject to any further restrictions contained in the preference rating

(Continued on page 81)

Priorities Regulation No. 10

Is a "symbol" method of showing the end use of material. Every order must bear a symbol. Our Industry does not have its own symbol and will therefore extend your customers symbol.

AS of June 1, our industry, and all other industries, must now conform with another drastic change in the routine of *purchasing* materials and equipment.

This change is embodied in Priorities Regulation No. 10 printed in this issue.

For an understanding of what is now entailed we report:

1—This is a material *allocation classification* system. 2—The purpose is to provide WPB with a basis of determining *where* materials are going. PR No. 10, through the use of symbols as explained in the order, shows where the material goes and eventually will determine whether the furnace industry or the airplane industry gets materials—and how much.

3—This is in no sense a program to displace existing priorities nor the Preference Ratings.

4—PR No. 10 will be applied as explained in Priorities Regulation No. 11 in this issue.

To determine the ultimate use of material, twenty three classifications are set up as follows:

Class 1—Aircraft
Class 2—Ships
Class 3—Vehicles
Class 4—Armament
Class 5—Ammunition
Class 6—War Equipment and Supplies
Class 7—War Facilities (camps, bases, fields)
Class 8—Raw Materials, Production, Processing
Class 9—Power, Light, Heat
Class 10—Transportation
Class 11—Communication
Class 12—Health and Safety
Class 13—Agricultural Equipment and Supplies
Class 14—Industrial Food Processing
Class 15—Wearing Apparel
Class 16—Equipment and Supplies for Household Use
Class 17—Education and Information
Class 18—Recreation and Amusement
Class 19—Equipment and Supplies for Office Use
Class 20—Machinery and Equipment, Industrial Use
Class 21—New Buildings, Construction of
 21.10—Buildings for manufacturing and commercial purposes
 21.20—Homes, hotels, apartments, etc.

944.31 Priorities Regulation No. 10: Allocation Classification System.—(a) **Classification System Established.**—There is hereby established an Allocation Classification System, in accordance with the Instructions issued by the Director of Industry Operations on the date of issuance of this Regulation. Except as provided in paragraph (b) below, the appropriate Allocation Classification Symbol and Purchaser's Symbol as required by said Instructions shall be indicated by every person placing a purchase order or contract on:

(1) All purchase orders or contracts placed after

21.90—Other buildings—farm, hospitals, public buildings

Class 22—Operating Supplies, also Building Repair and Maintenance

Building repair and maintenance includes the manufacturers of such products as heating furnaces, sheet metal repairs, etc., which are not identifiable as going into new construction.

Class 23—All Other End Uses (Jewelry, personal items)

We publish these classifications:

First—To show that warm air heating, sheet metal, roofing do not constitute a class and we, therefore, have no industry symbol.

Second—Since we have no symbol our industry will transmit to our suppliers and manufacturers the symbols received from our customers' orders.

To illustrate, assume you are a furnace manufacturer; a builder of houses wants a furnace. He is a recognized classification (21.20) and on his order to you he places symbol 21.20. When you, as a manufacturer, order plate to build his furnace you place the 21.20 symbol on your order—not any symbol of yours.

Another example—a furnace and sheet metal contractor. A hospital is erecting a nurses home to be heated by a furnace and having metal gutters and downspouts. You get the order. The hospital being a recognized classification places on its order to you the hospital symbol 21.90. When you order your furnace and your sheets or formed metal parts you, in turn, place on your order to your supplier or your manufacturer the 21.90 symbol.

In both these examples, because the purchaser is a "domestic purchaser" you place on your order to your supplier the Purchaser Symbol DP preceding the classification symbol thus—DP—21.20.

Lastly, it should be emphasized that this has nothing to do with priorities; the classifications do not determine the importance or relative need of an order; the idea, now, is to establish a guide whereby WPB can determine where critical material is going.

June 30, 1942;

(2) All purchase orders or contracts, either heretofore or hereafter placed, calling for delivery after July 31, 1942. Any person who has heretofore placed such a purchase order or contract may at any time hereafter and shall before July 31, 1942, notify the person with whom such purchase order or contract has been placed of the symbols applicable thereto.

(b) **Exceptions as to Retail Purchases.**—The provisions of paragraph (a) hereof shall not be applicable to retail purchases, purchases by retailers or purchases by dis-

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tributors for resale to retailers. Industrial and mill suppliers, warehouses, and other businesses performing similar functions for industry shall not be deemed retailers for the purposes of this paragraph.

Issued this 1st day of June 1942.

Purpose and General Instructions

I. Purpose.

The purpose of the Allocation Classification is:

(1) To obtain standardization and reduce the rules of different forms for allocation purposes that industry now must submit to the War Production Board.

(2) To furnish information needed by the War Production Board in the allocation of materials.

To allocate intelligently, it is necessary to know the subdivision of the war, industrial, and civilian programs for which materials are going to be used. For example, it is essential to know whether the materials are going to tanks, or destroyers, or railroads, or to office machinery and supplies in order to determine allocation policy. In addition, it is necessary to know in a general way what type of purchasers will eventually receive particular products of industry, i. e., whether the products will eventually be delivered to the Army, Navy, etc.

Accordingly, a dual classification system has been provided consisting of Allocation Classification Symbols (in the form of numbers), which will designate the particular kind of product for which material ordered will be used and Purchasers' Symbols (in the form of letters) to indicate the general type of purchasers to which delivery will be made.

Neither the allocation classification symbols nor the purchasers' symbols are intended to indicate order of importance, but are merely designed to provide a convenient means

(1) of identification of the subdivisions of the program for which the products or materials ordered are destined;

(2) of identification of the type of ultimate purchaser of the product; and

(3) of transmitting such identification on down through industry to the original suppliers of the material.

Retail purchases and purchases by retailers, will not transmit an allocation or purchaser's symbol on their orders. Since the retailer does not place an allocation or purchaser's symbol on its orders, the manufacturer, wholesaler, or distributor receiving these orders will place the Purchaser's symbol DP, on these orders. Industrial and mill suppliers, warehouses and businesses performing similar functions for industry are not deemed retailers.

II. Allocation Classification Number System.

A. General Description.—Each business is assigned to a numbered Class with certain exceptions discussed in paragraph (2) below, and most Classes are, in turn, divided into subclasses indicated by a decimal number.

In general terms every purchase order is to carry its allocation classification symbol.

There are two principal kinds of situations to distinguish in selecting the proper classification:

(1) The business of the purchaser may fall directly into one or more of the Allocation Classifications. In this case the business simply places on its purchase order the symbol representing the business for which the purchase order is placed.

For example, the manufacturer of tanks places the symbol 3.10 on all its purchase orders. The truck manufacturer uses 10.20.

(2) The business of the purchaser does not fall directly into any of the classifications. In this case, the purchaser has no symbol to identify its own business but simply transmits the symbol it receives on the purchase orders which its customers have placed with it.

For example, the manufacturer of furnaces receiving an order from a builder bearing the symbol 21.20 places the same symbol 21.20, on its purchase order.

Mixed cases are covered below.

Once a business has determined in which situation it finds itself, it should then place the proper symbol or symbols on every purchase order which is issued.

B. Procedure for Use of Classifications.—

(1) Each business should first determine whether or not its operations fall directly into one or more of the allocation classifications listed or whether it should use the Allocation Classification symbols that are on the orders which it receives from its customers.

To determine this, each business should consult the Specific Instructions and the detailed Classified or Alphabetical Lists. These should furnish the necessary information to enable each business to classify its operations properly.

(2) Each business directly falling in any class should consult the "Specific Instructions" covering its classification for any specific instructions that may apply to that classification alone.

(3) Where the operations of a business fall directly into one or more Allocation Classifications—

a. Any business whose operations fall directly into one Allocation Classification should place its classification symbols on all purchase orders that it issues regardless of what they are for. For example, a railroad ordering metal-working machinery would classify the order under Railroad (10.10) despite the fact that metal-working machinery is a separate classification.

b. Any business whose operations fall directly into two or more Allocation Classifications should transmit the symbol or each classification to the extent that it can trace the particular purchase to the proper classification under its established methods of bookkeeping or inventory control. Where this is not practicable, it should place on its purchase orders the percentage division between its sales for the latest available month. For example, a company engaged in the manufacture of household furniture and office furniture and maintaining a single inventory should place on its orders 16.00, 60 percent, 19.00, 40 percent.

(4) In the case of a business manufacturing parts or subassemblies, such as electric motors, air compressors, ball bearings, etc., which do not fall directly within any of the listed classifications—

a. Where an item can be traced directly to one Allocation Classification, the business should transmit the classification symbol for that item on its purchase order. For example, if a storage battery company orders materials to be used in the manufacture of storage batteries for automobiles, the symbol for automobiles (10.20) should be placed on the purchase order.

b. Where an item or items cannot be traced directly to one Allocation Classification, the business should transmit on the purchase order for that item or items the percentage division between Allocation Classifications based on the dollar volume of its sales for that item or items using the latest available month as the base period. The following principles should be followed in doing this—

1. Where the business falling under any one allocation subclass comprises 5 percent or more of the total business, that symbol and its percentage is transmitted on the purchase order.

2. Where the business falling under any one allocation subclass is less than 5 percent of the total dollar volume and can be grouped with other subclasses falling under one main allocation class, it should be so grouped. For example, a percentage division might be: Classification 5.10, Ammunition, 20 mm. and above, 3 percent; Classification 5.20, Ammunition, small arms below 20 mm., 4 percent. Since both 5.10 and 5.20 are subclasses of the Class 5.00, the two should be combined under the main class and reported as: 5.00, 7 percent.

3. After combining the subclasses under any

one class, if the class still totals less than 5 percent, this portion of the business should be prorated over the classifications which are 5 percent or more.

c. It is important that the item or items which can be traced directly to one Allocation Classification and which transmit a single numerical symbol should be excluded in making an analysis of sales for the item or items which cannot be traced directly to any one Allocation Classification.

III. Purchasers' Symbols

In addition to the information required in respect to Allocation Classification Symbols, the War Production Board will still have need of the information which is already being furnished as to whether the orders are placed by the Army, the Navy, etc. This will be continued and slightly extended. A series of letter symbols has been adopted to indicate the purchaser.

Purchaser	Symbol
The Army	USA
The Navy (includes Maritime Commission)	USN
Lend-Lease	LL
Other foreign purchasers	FP
Domestic purchasers	DP

When orders bearing these symbols are received by a business, the business must pass them on to its suppliers even though the allocation number may be changed.

The appropriate purchaser's symbol should in each case precede the numerical allocation symbol placed on purchase orders so that the Allocation Classification will be

broken down by Army, Navy, Lend-Lease, etc. The same instructions for transmission in percentages, etc., apply to these symbols as to the allocation symbols.

IV. Application to Existing Orders

It is essential that classification symbols and purchasers' symbols should be applied not only to all orders to be placed in the future but also to existing orders that have already been placed for delivery after July 31, 1942. To do this, it is the responsibility:

(1) Of each business that falls directly into one or more Allocation Classifications to review the orders that it has already placed and advise each of its suppliers as to what classification symbols and purchasers' symbols should be applied.

(2) Of each business that does not fall directly into one of these classifications (i. e., manufacturers of parts or subassemblies), to transmit to all its suppliers with whom purchase orders have been placed the classification symbols and purchasers' symbols that it receives from its customers.

(3) Of the Army and Navy procurement officers and of the Maritime Commission to advise their prime contractors as to what purchasers' symbols should be applied to the purchase orders that these services have already placed with them.

If any business is in doubt as to how it should classify its operations and transmit the classification symbols or purchasers' symbols to its suppliers, it should communicate with the War Production Board at the nearest field office or in Washington, D. C.

Simplified Form For PD-25A

UNDER the Production Requirements Plan (PRP) made mandatory for all concerns using more than \$5,000 worth of metal in a quarter (described under Priorities Regulation 11 in this issue) the request for materials must be made at the beginning of each quarter on form PD-25A.

Originally, when PRP was a voluntary choice, PD-25A was seven pink sheets, 11½ by 16 inches. One sheet contained instructions, two sheets contained some 2,500 materials which were obtained by filing the PD-25A. Five sheets were made out identical and were sent to Washington; one was returned to the applicant with an authorization filled out.

Now, because many, many more firms must use PRP and because the "end use" of the material requested will eventually be determined by Priorities Regulation No. 10 (in this issue) and also because materials hereafter will be distributed industry-wise on an allocation basis, PD-25A has been simplified.

On the facing page we reproduce the official form showing what you can omit from the PD-25A's which you will get for the present. Because you may not be able to read the explanation as reduced, we report:

"Section B and D are about shipments for 3 recent months and estimated requirements for the next quarter. In Section B the shipments are summarized by product classes; in D-1, by preference rating; and in D-2, by end use. Enter in Column 1 only such classes of products as are being currently manufactured from materials included in the application. Do not include products for which materials are not purchased by you. Do not fill in Columns 6, 7, 8, 9 (this is the first simplification). Columns 10 and 11 are to cover the calendar quarter for which the application is made.

"Section C (inventory report covering classes of products included in Section B) is now omitted.

"Section D has only one change—Columns d and e originally headed 'Unfilled Orders as of' is now

changed to 'Schedule for Shipment During Quarter' and you should show the classification by preference ratings based on unfilled orders scheduled for shipment during the coming quarter. Figures in Column D should cover only products included in Section B.

"Sections E and F cover inventories. For each material you will now report the amount of material remaining in inventory (Column 7) and you will estimate in Column 8 the quantities you anticipate you will need in the next quarter. In Column 10 (another change in heading) insert the quantities to be required during the quarter covered by the application (coming quarter).

(Editor's Note—We have heard from a number of fabricators that some WPB offices are telling applicants that even bolts, screws, nails, solder, rivets, etc. must be estimated. If your inventory has not kept such a record of small supplies you will have to install a perpetual inventory or change your Purchase Records so that these small supplies show up quickly—by quantity—each month.)

"In Section F Columns 4, 5, 6 have been eliminated. Column 7 now becomes important because this again shows remaining inventory. Column 8 will now show the anticipated requirements for the coming quarter and Column 10 the dollar value of these requirements. Column 10 is now important because ratings will be assigned to the total approved dollar volume shown here.

"Section G has had Columns 4, 5, 6, 7, 8 taken out. Fill in Column 9 only. Also important. Section G may now be used to obtain minor capital items concerned with plant operation but not office machinery, machine tools, large equipment, and no material for addition to or expansion of existing property or facilities.

"Lastly, all applications must now fill in Section E and F Supplement as revised and explained above."

WAR PRODUCTION BOARD
DIVISION OF INDUSTRY OPERATIONS
BUREAU OF PRIORITIES
WASHINGTON, D.C.

SUPPLEMENTARY INSTRUCTIONS FOR SUBMITTING APPLICATIONS OF PD-25A UNDER THE PRODUCTION REQUIREMENTS PLAN:

TO SIMPLIFY AND REDUCE THE AMOUNT OF WORK NECESSARY TO PREPARE AND SUBMIT A PD-25A APPLICATION UNDER THE PRODUCTION REQUIREMENTS PLAN AND TO EXPEDITE THE HANDLING OF THESE APPLICATIONS AFTER THEY HAVE BEEN SUBMITTED, CERTAIN CHANGES ARE BEING MADE IN THE INFORMATION REQUIRED ON THE CURRENT APPLICATION FORM (PINK FORM). THE CURRENT FORM WILL CONTINUE TO BE USED, BUT THE CHANGES INDICATED WILL BE MADE IN THE INFORMATION REQUESTED, EFFECTIVE AT ONCE AND UNTIL FURTHER NOTICE. HOWEVER, APPLICATIONS ALREADY SUBMITTED, OR NOW IN PROCESS OF PREPARATION, WILL BE ACCEPTED EITHER ON THE PRESENT OR REVISED BASIS.

PAGE 1. INDICATE AT THE TOP OF THE FIRST SHEET THE CALENDAR QUARTER COVERED BY THE APPLICATION, CROSSING OUT THE WORDS "APRIL-JUNE" WHERE NECESSARY

Attach a catalogue or other
complete description of products
unless now on file.

APPLICATION FOR PRIORITY ASSISTANCE UNDER
PRODUCTION REQUIREMENTS PLAN

For Calendar Quarter April-June 1942

Ind.			
St.			
P. N.			

SECTION B. ENTER IN COLUMN 1 ONLY SUCH CLASSES OF PRODUCTS AS ARE BEING CURRENTLY MANUFACTURED FROM MATERIALS INCLUDED IN THE APPLICATION. DO NOT INCLUDE PRODUCTS FOR WHICH MATERIALS ARE NOT PURCHASED BY THE APPLICANT. DO NOT FILL IN COLUMNS 6, 7, 8 AND 9. COLUMNS 10 AND 11 ARE TO COVER THE CALENDAR QUARTER FOR WHICH THE APPLICATION IS MADE.

SECTION B.—Shipments: Show below the number of units and dollar volume of shipments (including transfers to other divisions, departments, or plants) of each of the classes of products shown in column (1). In columns 6 to 9 show shipments for each product class by the indicated preference rating groupings for the most recent 3 months for which figures are available. Estimate the April-June 1942 calendar quarter in total only. Please read the instructions for guidance in grouping the products you manufacture.

DESCRIPTION OF CLASSES OF PRODUCTS	DO NOT USE (1)	UNIT OF MEASURE (2)	SHIPMENTS DURING MOST RECENT 3 MONTHS ANALYZED BY PREFERENCE RATINGS						ESTIMATED TOTAL SHIPMENTS CALENDAR QUARTER APRIL-JUNE 1942	
			From		To				Units (10)	Dollars (Omit cents) (11)
			TOTAL	AA and A-1	A-2 through A-9	A-10	OTHER AND NONRATED			
			Units (4)	Dollars (Omit cents) (5)	Units (6)	Dollars (Omit cents) (7)	Units (8)	Dollars (Omit cents) (9)		

SECTION C. OMIT.

SECTION D. CORRECT THE HEADING AS SHOWN ON ILLUSTRATION. FILL IN COLUMNS (D) AND (E) AS SHOWN. SHOW IN COLUMNS (D) AND (E) THE CLASSIFICATION BY PREFERENCE RATINGS BASED ON UNFILLED ORDERS SCHEDULED FOR SHIPMENT DURING THE QUARTER COVERED BY THIS APPLICATION. FIGURES IN SECTION D SHOULD COVER ONLY PRODUCTS INCLUDED IN SECTION B IN WHICH MATERIALS COVERED BY THIS APPLICATION ARE TO BE INCORPORATED.

PART 1.—CLASSIFICATION OF SHIPMENTS AND UNFILLED ORDERS
BY PREFERENCE RATINGS

ITEM	CLASSIFICATION	SHIPMENTS From _____ To _____ (give detail)		Scheduled for Shipment During Quarter	
		Dollar Volumes (b)	Percent of Total Dollar Volumes (c)	Dollar Volumes (d)	Percent of Total Dollar Volumes (e)
PREFERENCE RATINGS:					

SECTION E. IN ORDER TO BE CONSISTENT WITH THE PD-275 FORM (REPORT ON METAL CONSUMPTION AND REQUIREMENTS), WHEN SUBMITTING PD-25A FORMS ON THE REVISED BASIS, THE CLASSIFICATION LIST FOR METALS, AS SHOWN ON THE REVERSE SIDE OF THIS SHEET, WILL BE USED INSTEAD OF THE PRESENT LISTING ON MATERIALS LIST NO. 1. FOR ALL OTHER MATERIALS THE CLASSIFICATIONS ON THE PRESENT MATERIALS LIST NO. 1 WILL BE THE SAME. DO NOT FILL IN COLUMNS 4, 5 AND 6. BE SURE TO FILL IN COLUMN 7. SHOW IN COLUMN 8 THE QUANTITIES REPRESENTING TOTAL ANTICIPATED REQUIREMENTS FOR ACTUAL CONSUMPTION DURING THE QUARTER COVERED BY THE APPLICATION (AS AT PRESENT). INSERT IN COLUMN 10 THE DOLLAR VALUE REQUIRED TO BE RECEIVED BY THE APPLICANT DURING THE QUARTER COVERED BY THE APPLICATION. THIS FIGURE SHOULD INCLUDE ALL QUANTITIES SCHEDULED TO BE RECEIVED DURING THE QUARTER, EVEN THOUGH PREVIOUSLY ORDERED.

NOTE. THE DIFFERENCE BETWEEN COLUMN 8 AND 10 WILL INDICATE THE QUANTITIES THAT CAN BE TAKEN FROM INVENTORY TO COMPLETE THE PRODUCTION SCHEDULE.

SECTION E.—Report of all materials shown on Materials List No. 1, Revised, used in the manufacture of the products included in Section B

ITEM NO.	DESCRIPTION OF MATERIALS	LEAVE BLANK (1)	UNIT OF MEASURE (2)	STATEMENT FOR QUARTER ENDING (Most recent 3 months for which figures are available)				QUARTER ENDING JUNE 30, 1942			
				Inventory Beginning of Quarter (3)	Inventory During Quarter (4)	Used During Quarter (5)	Inventory End of Quarter (7)	Total Anticipated Requirements (8)	Estimated or Actual Value of (9)	To Be Re- ceived By Applicant During Quarter (10)	Leave Blank (11)
				Quantity	Quantity	Quantity	Quantity	Quantity	(Omit cents)		

SECTION F. COLUMN 1—SHOW IN COLUMN 1 SEPARATE GROUPINGS OF SIMILAR ITEMS. DO NOT FILL IN COLUMNS 4, 5 AND 6. BE SURE TO FILL IN COLUMN 7. SHOW IN COLUMN 8 THE QUANTITIES REPRESENTING TOTAL ANTICIPATED REQUIREMENTS FOR ACTUAL CONSUMPTION DURING THE QUARTER COVERED BY THE APPLICATION (AS AT PRESENT). INSERT IN COLUMN 10 THE DOLLAR VALUE REQUIRED TO BE RECEIVED BY THE APPLICANT DURING THE QUARTER COVERED BY THE APPLICATION. THIS FIGURE SHOULD INCLUDE ALL QUANTITIES SCHEDULED TO BE RECEIVED DURING THE QUARTER, EVEN THOUGH PREVIOUSLY ORDERED.

NOTE ON COLUMN 10. THE DIFFERENCE BETWEEN COLUMN 8 AND COLUMN 10 WILL INDICATE THE QUANTITIES THAT CAN BE TAKEN FROM INVENTORY TO COMPLETE THE PRODUCTION SCHEDULE.

NOTE ON SECTION F. RATINGS WILL BE ASSIGNED TO THE TOTAL APPROVED DOLLAR VOLUME OF THIS SECTION.

SECTION F.—Report of other materials used in the manufacture of the products included in Section B for which preference rating is requested

ITEM NO.	DESCRIPTION OF OTHER MATERIALS NOT ON MATERIALS LIST NO. 1 REVISED	LEAVE BLANK (1)	UNIT OF MEASURE (2)	STATEMENT FOR QUARTER ENDING (Most recent 3 months for which figures are available)				QUARTER ENDING JUNE 30, 1942			
				Inventory Beginning of Quarter (3)	Inventory During Quarter (4)	Used During Quarter (5)	Inventory End of Quarter (7)	Total Anticipated Requirements (8)	Estimated or Actual Value of (9)	Dollars Only (10)	Leave Blank (11)
				Quantity	Quantity	Quantity	Quantity	Quantity	(Omit cents)		

SECTION G. DO NOT FILL IN COLUMNS 4, 5, 6, 7 AND 8. FILL IN COLUMN 9 ONLY. IN ADDITION TO MAINTENANCE, REPAIR AND OPERATING SUPPLIES, SECTION G MAY NOW INCLUDE MINOR CAPITAL ITEMS. SUCH ITEMS MUST BE CONCERNED WITH PLANT OPERATIONS, MUST NOT INCLUDE OFFICE MACHINERY, MUST NOT INCLUDE ANY MATERIAL FOR ADDITION TO OR EXPANSION OF EXISTING PROPERTY OR FACILITIES, AND MUST NOT INCLUDE MACHINE TOOLS OR LARGE EQUIPMENT. IT IS NO LONGER NECESSARY TO SHOW SEPARATELY IN SECTION E ITEMS PURCHASED IN THE FORM LISTED ON THE MATERIALS LIST WHICH ARE USED FOR MAINTENANCE, REPAIR OR OPERATING SUPPLIES.

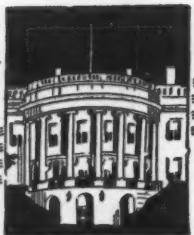
SECTION G.—Report of supplies:				X	X	X	X	X	X	X
Total (Maintenance, Repair, Operating)...	x x x	Dollars	X	X	X	X	X	X	X	X

SECTION E AND F SUPPLEMENT

SPECIAL NOTE: -- The amount of information required in Sections B through G of form PD-25A has been reduced. However, all applicants are now required to fill in "Section E and F Supplement". The total of the quantities entered in the anticipated requirements columns of "Section E and F Supplement" must equal the requirements of each material reported in Column 8 of Section E only. Materials shown in Section E should be disregarded in filling out "Section E and F Supplement".

(See over for Metals List)

Arnold
Kruckman's



Washington Letter

Remodeling for War Worker Quarters Is Mired

REMODELING (or rehabilitation, if you like the official word better) is a flop. Naturally, FHA would not admit it or suggest it officially, but the fact is accepted as a definite conclusion in Washington.

The idea that people will turn their single-family home into 6 more rooms for the accommodation of War guests sounds good on paper, but it simply does not appeal to the average family. Obviously, the average family of moderate means is not anxious to go in debt for \$1,000 to \$3,000 for the necessary alterations without some feeling of security that the outlay will come back. To make the changes it is estimated in Washington, will cost from \$300 to \$500 per room, according to the added expense involved in heating, sanitary and similar major services. Thus, the gross cost can quickly be between \$1,800 and \$3,000.

The assumption is that the average home can be changed around; is a two-story, single-family structure, and that its space can be cut up into six additional rooms therefore Government people optimistically calculate each room can bring from \$30 to \$35 per month. On paper, with all rooms earning income, the return should be from \$2,160 to \$2,520 per year for all six rooms. Government statisticians figure the principal and carrying charges should be liquidated in three years.

Owners Not Enthusiastic

There also seems some reluctance on the part of the average home-owner to take in the casual War guest; but this hesitation can be overcome by the normal methods of finding out about the prospective tenant and by an appeal to patriotism. The hurdle hard to overcome is the fear that the War prosperity in the community will not last long enough to liquidate the debt.

All this is really not an imputation on the average householder's patriotism. He usually has acquired his home by privations and he knows too well there is much difference between the ideal scheme of paying off on paper and as it works out when the unexpected contingencies happen. He dreads going into a debt he cannot see his way out of; particularly the women in the family. There is a strong suspicion here that the women are the real drawback.

Housing agencies have discussed all kinds of ideas to overcome this reluctance. They have suggested some form of compulsion under War emergency laws. But there is no legal way in which an owner of private property can be forced to spend money to change his own home to accommodate War workers. There is no way even to force the private householder to accept soldiers as guests. Billeting is expressly and specifically prohibited in the Bill of Rights.

By analogous reasoning the conclusion has been reached here that you cannot billet unwanted guests who are War workers. The latter opinion is not unanimous. Some legalistic officials hold billeting is constitutional. Others feel it can be enforced constitutionally by additional legislation. But the vast majority think it is unconstitutional, and therefore could not be done without the tedious process of a Constitutional amendment, which, at this time, would be useless and probably fail. There are many good and sincere people in Washington who wistfully look over to England and observe how the English people have been induced without argument to accept billeting. It was done there not very long ago by legislation. The very fact of legislation implies an authority that overcomes British opposition. When Parliament makes a Law, the British people almost invariably submit. But Washington knows only too well that our people are different. They still think, particularly the people some politicians now call "the little people," that what they own as utterly as they own their homes is their absolute property, and they resist intrusion on their right to use it as they see fit.

No Remodel—No Heat

Some official thinkers are now considering one method of indirection that may yet be tried. It is indicated that almost every household will need fuel, for instance; and fuel is becoming scarcer. There is some probability that fuel may be very definitely rationed. The car owner who shares his car will increasingly get more gas and oil and, possibly, tires, than the owner who does not. By the same reasoning fuel and other supplies for the household, may in the future be rationed according to the relation of total dwelling space to the number of persons who dwell in the home.

It is possible in the future a certain proportion of the space regarded as unnecessary for the number who use a house may be subtracted from the fuel furnished under the rationing schedule. Obviously, if this comes to pass, the householder will be confronted with the alternative of shutting off the unused space in order to concentrate the heat, or to convert the space into rooms for War guests. There is considerable substance to the thought along this line. It is clear this program would legally fit into the existing War laws and might impel many householders to convert. Conversion under this system would not be compulsion. The option would lie with the owner. If he converts, he would be able to earn some income, he would serve the country's needs, and he would inevitably be more comfortable in his own home. It is wise to keep an eye on this angle. There is considerable likelihood it

may be tried. Particularly if the need for housing grows still more acute. Bear in mind, conversion saves time. It can be accomplished much more swiftly than new building.

Another suggestion is less likely to be tried. But it is interesting. You will recall, several years ago, in these columns, we told the story of the Waverly project near Baltimore. The Home Owners Loan people through local leaders organized an area in the industrial section, consisting of many blocks, to spruce up the homes that had fallen into disrepair. It was found that individual owners were reluctant to give the house a new coat of paint, or to fix up the heating plant. In the mass of homes in the neighborhood the occasional dwelling that was fixed up looked conspicuous and made the owners rather embarrassed.

But when the whole block undertook a refurbishing program group psychology made the undertaking far easier. And when the whole area swung into action the result was extraordinary. John Smith readily went along with Jim Brown. It even caught the imagination of the small stores and shops in the neighborhood. FHA and NHA and FPHA have in mind a similar effort as a War drive. The weakness of the plan is that it takes time.

It You Can't Rent—Don't Pay

There is the hint of a possibility that this idea may be hooked up with another idea to overcome the fear that the improvement may not pay out before the War is over. Out in the Far West, in the reclamation areas, it has frequently happened that the landowners who contracted to pay for dams and ditches and similar improvements to place water on their acres, found they were unable to pay off after the allotted period had expired. By adjustments with the Government, and by legislation enacted by Congress, sometimes some costs were written off, and other financial burdens were extended by a series of new loans or contracts. It has been suggested under the circumstances, Congress might later be induced to absorb that portion of loans guaranteed by the agencies which underwrite them. Since the indebtedness would have been incurred to help the whole people, everywhere, in essence the Government, to furnish a badly needed service to speed the winning of the War, it is felt, there would be justification for placing the deficit upon the shoulders of the Government.

After all, the small householder, who embarks on remodeling to provide rooms for War workers is not a free agent in determining his earnings from the venture. He may charge only the rental schedule imposed in his specific area by OPA Rental-Control scales. Approximately 572 War areas have been defined by Henderson as "defense rental areas." Over 90,000,000 persons live in these areas, equivalent to well over two-thirds of the population of the United States, or almost three-fourths of the entire population.

Where Do We Need Housing?

It is difficult to list areas having the greatest need for war housing. One agency says out of more than 300 major War areas only 18 are filled to absolute saturation. Another says the lack of housing is perilously close to zero in almost all war areas. The normal percentage of unoccupied shelters for the nation is something over 10%, in peacetime. In 1941, the Department of Commerce found that less than 4% vacancies existed throughout the nation. It is estimated now that there are sharply less than 2% vacan-

cies of any kind in the national sense.

WPA made a workmanlike professional survey of housing facilities in War areas and it is upon this survey that most Government agencies base their present estimates, both nationally and locally. It is only fair to record that many uncertainties are not the fault of officials or lack of planning but are due to the circumstances of our own socio-political system. For instance a Southern community may report it has plenty of shelter for an expected flood of War workers, yet an impartial survey reveals that what the local Chamber of Commerce includes in its estimate consists of an overwhelming number of structures that literally are shelters and nothing else. They are not the kind of shelters any kind of workers will use to make a home in.

Another difficulty in arriving at sound figures is the fact that innumerable communities ignore the housing problem because they are afraid a statement of fact will be harmful to the community interests abroad. The industrialists of the locality often force the commercial organizations to avoid discussions of housing problems because they fear the truth will keep the workers they need away from their plants. Despite the natural effort of Government officials to play down the lack of housing, it is undoubtedly true that there are very few War areas with adequate housing. We know, for instance, the lack in Texas has seriously endangered bomber production; we are told, off the record, there is a gaping void in real housing from Vancouver all the way down to San Diego; we hear in Washington about housing shortages in New England, in Memphis, in Buffalo, in Tonawanda, etc.

Big Migration Still to Come

It is obvious the great mass of workers to be moved in the next few months from one part of the country to another must go to the places where they build ships, planes, and material whose factories cannot be shifted from one part of the map to another. McNutt has enunciated the principle that the job must be brought to the workers rather than the workers to the job. It sounds nice, like many similar slogans, but on the whole it does not work. The trouble is that where the job is located there is usually an absence of enough workers to do the extraordinary increase that is required of the job. There are relatively few War plants in the South and in the Middle West where under normal circumstances the factories for peacetime production hum. But there are an extraordinary number of War plants in the Pacific West and in other regions not usually regarded as industrial sections.

Apparently the greatest shift in workers has just begun with July. The big migration is in the months ahead. They tell us here in Washington that they are now driving to get ready the housing to be occupied by workers in November; and that next month the building of quarters will be in full swing to be occupied in December. And in September they will be going full tilt at housing to be occupied in January; and so on. There is much hush-hush about the place and the kind which makes it almost impossible for the contractors and subcontractors who must do the building and the equipping and the remodeling to prepare properly for their part of the work. Some of the secrecy is based on sound defensive reasons; some of it is silly; some of it is just pure dumb and is due to bewilderment and incompetence. The whole business of contracts and contracting is due to be over-

(Continued on page 79)

On Our Industry's Front

AAA Now Highest WPB Rating

Provision for rerating war orders and for applying a new series of high preference ratings is made in Priorities Regulation No. 12, and amendments to Priorities Regulations 1 and 3, issued June 27.

The new ratings are AAA, AA-1, AA-2, etc., all of which will take preference over A-1-a ratings. Heretofore the highest rating has been AA, whose use was permitted only by special authorization of the Director of Industry Operations. This rating is now abolished, and all outstanding AA ratings are automatically changed to AA-2.

The chief purpose of the rerating is to permit greater flexibility in the assignment of preference ratings to definite quantities of military and related nonmilitary items, most of which have recently been AA or in the A-1 series. It will permit use of top ratings for a balanced program of urgent war materials without seriously disturbing the pattern of ratings for other war and essential civilian orders.

Assignment of Ratings

The new high ratings may be assigned either directly by the Director of Industry Operations or by appropriate officers of Government war agencies expressly authorized to issue reratings. A special form, PD-4X, called a "Rerating Direction," is prescribed for use where the Army, Navy or other Government war agency rerates deliveries of war materials to be made directly to it.

Whenever a rerating direction is issued, it must include the Allocation Classification and Purchasers' Symbols required by Priorities Regulation No. 10.

Reratings by Manufacturers

A separate form called a "Rerating Certificate," PD-4Y, is provided for use by a manufacturer whose deliveries to a war agency have been rerated, so that he may in turn rerate related deliveries to be made to him.

Companies operating under the production requirements plan are specifically authorized, like other companies, to apply or extend the higher ratings to rerate deliveries to obtain greater quantities of material than they are authorized to receive on their PRP Certificate (Form PD-25A) or a supplementary certificate issued upon application on Form PD-25F or PD-25H.

New Factory Construction Curtailed

IN a move to make all possible material and effort available for immediate war production, War Production Board and the War and Navy Departments have established broad principles governing all wartime construction which will bring such building under more rigid conservation control.

The program means that no new plants will be built unless they are absolutely essential and can meet seven newly established criteria. This applies not only to direct war plants but to all other construction, both publicly and privately financed.

One of the main reasons for the new policy is that

all critical materials are needed for war production now, and no materials can be spared for building new facilities except when they are absolutely necessary.

The seven criteria which must be met before any project will be approved for construction follow:

1. It is essential for the war effort.
2. Postponement of construction would be detrimental to the war effort.
3. It is not practical to rent or convert existing facilities for the purpose.
4. The construction will not result in duplication or unnecessary expansion of existing plants or facilities now under construction or about to be constructed.
5. All possible economies have been made in the project, resulting in deletion of all non-essential items and parts.
6. The projects have been designed of the simplest type, just sufficient to meet the minimum requirements.
7. Sufficient labor, public utilities, transportation, raw materials, equipment and the like are available to build and operate the plant. The manufactured product can be used at once or stored until needed.

Your Mechanics May Be Interested in This

ENLISTMENTS for service in the Army Engineer Construction Regiments and Dump Truck Companies are now being accepted. Recruits will be trained by the Army Corps of Engineers at Camp Claiborne, Louisiana, where the units are being organized. Enrollment is open to men between the age limits of 18 and 45, and will be until May 25 with probable extension.

The new units, modelled along the lines of similar forces which proved very effective in the World War, will offer highly skilled civilian workers and technicians an opportunity for vitally important service in all American theaters of operation.

Details of enlistment in such units may be obtained at local U. S. Army Recruiting and Induction Service Stations.

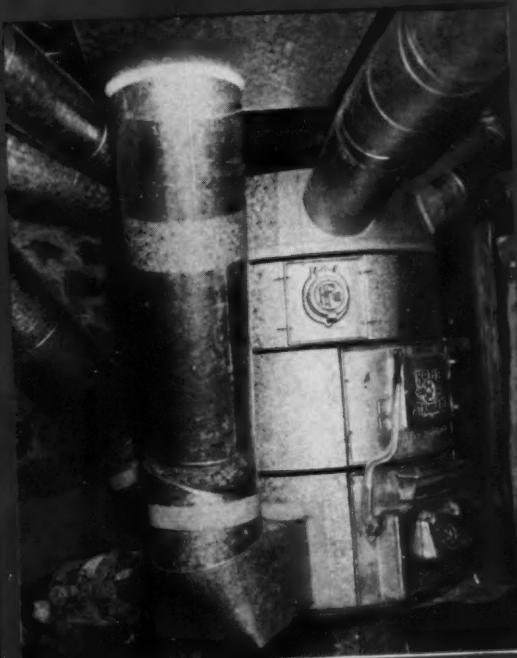
Requirements for enlistment include construction experience along virtually all lines associated with the building industry. Approximately 75 per cent of the personnel will serve in specialist capacities, at increased compensation over basic rates of pay, with opportunities for appointment as non-commissioned officers. The services to be performed by the construction units will be greatly diversified and will include the building of fortifications, bridges, roads, railroads, docks, wharves, storehouses, depots, airfields, barracks, hospitals, utilities and other phases of military construction.

Following are some of the skilled crafts desired: Auto mechanics, tool dressers, carpenters and carpenter foremen, railway construction foremen, general construction foremen, draftsmen, mechanical draftsmen, structural draftsmen, topographic draftsmen, electricians, painters, camoufleurs, pipefitters and foremen, supply sergeants, sheet metal workers, tool room keepers, heavy truck drivers, combination welders, tractor mechanics, stock clerks, light truck drivers, motorcyclists, company clerks.

AMERICAN ARTISAN

RESIDENTIAL AIR CONDITIONING

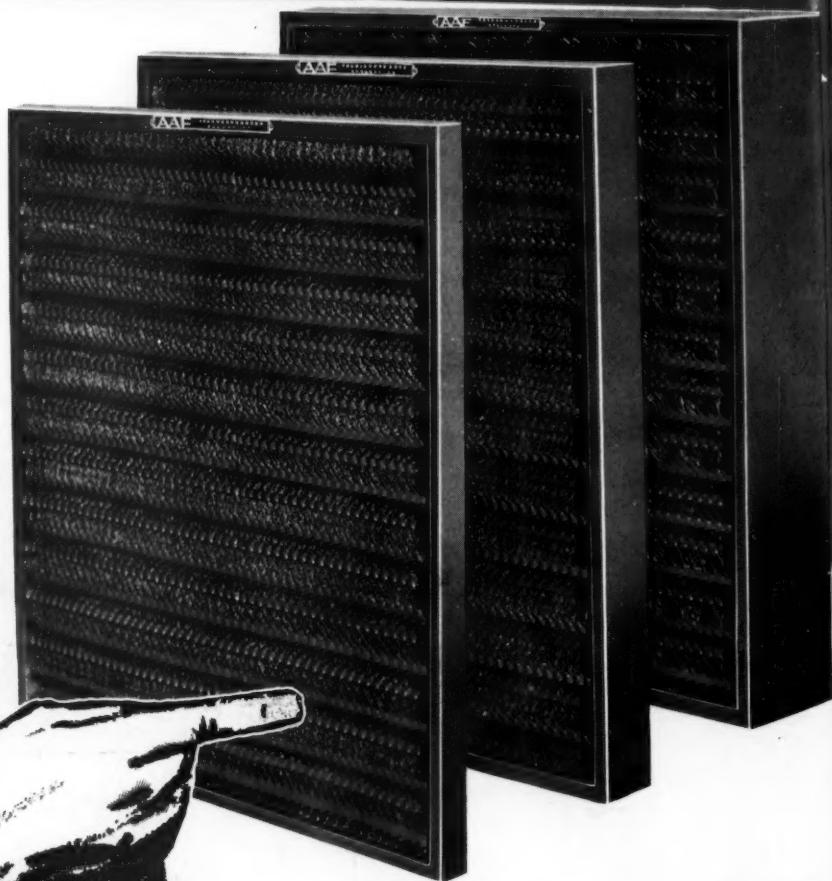
SECTION



DEVOTED TO HOME AND SMALL COMMERCIAL AIR CONDITIONING



AIR FILTERS PROTECT THE MEN IN TRAINING



in Uncle Sam's Military Cities

★ Barracks, Recreation rooms, class rooms, theatres—in fact all buildings where large numbers of men congregate must be provided with ventilating, heating and cooling facilities equipped with air filters. Thousands of American A-C unit filters have been furnished by the American Air Filter Company for use in army camps throughout the nation. The A-C is a permanent type washable unit filter having an overall higher cleaning efficiency than

throwaway type filters and is more economical in operation because of its washable feature.

American Air Filters of all types are available for manufacturing plants engaged in war production and other public or private buildings in use by war emergency agencies.

Complete information and bulletins describing the full line of AAF filters and other dust control equipment is available on request.

AMERICAN AIR FILTER COMPANY, INCORPORATED, 355 CENTRAL AVENUE, LOUISVILLE, KY.

In Canada: Darling Bros., Ltd., Montreal, P. Q.

A-C Washable Type PERMANENT FILTER

Heating and Insulation Requirements For Defense Housing

Furnaces now installed in Defense Housing are permitted a maximum output according to the floor area of the building. If the heat loss exceeds the furnace capacity, the builder must insulate his house down to the furnace capacity. The handy tables contained in this reprint of the United States Gypsum Company's "U. S. G. Builder" enable you to determine the permissible furnace capacity and how much insulation, and where, is required.

THE Defense Housing Critical List issued by the War Production Board and made effective February 24, 1942, is one of the most important documents with respect to housing ever issued by any Government agency. It tells what materials may be employed in defense housing and what materials are banned. Its purpose, of course, is to prevent the wasteful or unnecessary use of critical materials, particularly metals.

The part devoted to heating (Section 500) defines the size, and to a large extent, the type of heating plants that may be used in defense houses. At the same time, this section also establishes the maximum hourly heat loss that will be permitted from any dwelling unit. This last section, indirectly, but nonetheless effectively, governs the use of building insulation materials to keep heat losses within the permitted limits.

Effect on Building Design

Builders or prefabricators of defense housing units and manufacturers of heating equipment for such units are vitally affected by the provisions of Paragraphs 511 and 512 in this important document. Designers of homes for defense workers must take into consideration various methods of restricting heat losses from the buildings they are developing: First, to be certain that the maximum net hourly output capacity of the heating plant does not exceed the permitted maximums, and, second, to make certain that the heating plant that can be used in each house is not loaded beyond its maximum net hourly output capacity.

The essential facts are condensed in these two basic requirements:

1. The maximum net hourly output capacity of a heating plant for a dwelling unit shall not exceed either 80,000 Btu or 66 Btu times the floor area in square feet, whichever is the smaller.

2. The dwelling itself shall not have a total hourly heat loss greater than the allowed capacity of the heating plant.

Interpretation

The size of the heating plant—in terms of its accurately rated maximum net hourly output capacity—is limited by the first part of the order. If the floor area of a dwelling is 600 square feet, the heating unit selected by the heating contractor will be approved only if the net hourly output capacity is 39,600 Btu (66 Btu x 600) or less. Under a strict interpretation, it cannot be 40,000 Btu, nor even 39,650 Btu; the top limit is 39,600 Btu, no more.

Heating plant ratings seldom exactly match the allowable capacity for a given dwelling. Ordinarily, the heating contractor must select a unit *smaller* than the allowable net hourly output. In the example given, the heating contractor may find a unit rated under its proper code or test at say 35,000 Btu. This size unit would be approved for the house.

It is required that the maximum hourly heat loss from the dwelling *shall not be any greater than the heating plant can supply*. Therefore, the designer's next step is to see that the dwelling



Map showing design temperature zones for use with Table 1, approximate. Actual design temperatures, of course, may differ as much as 20 degrees from the map; therefore use your customary design conditions or consult local weather bureau.

TABLE I APPROXIMATE HEATING ALLOWANCE
Issued by War Production Board,

NET FLOOR AREA (Heated space only) IN SQ. FT.	550	575	600	625	650	675	700	725
MAXIMUM PERMISSIBLE HEAT LOSS in Btu per hour. (Floor area x 66 Btu)	36,300	37,950	39,600	41,250	42,900	44,550	46,200	47,850
PROBABLE FURNACE RATING (Net Btu delivered) (See text)	35,000	35,000	35,000	40,000	40,000	40,000	45,000	45,000
LOCATION (By climate) AND TOTAL HEAT LOSS FACTORS								
See Table II for use of Heat Loss Factors	OUTSIDE DESIGN TEMPERATURE	— 20° F.	207	177	148	211	183	159
		— 10° F.	296	261	228	300	269	241
		0° F.	409	369	332	415	378	347
		+ 10° F.	561	516	472	567	525	488
		+ 20° F.	773	716	668	780	730	686
							572	535
							782	741

in the example is so built—or insulated—that it will not require more than 35,000 Btu per hour in the coldest weather to keep the inside air temperature at 70° F.

Procedure—Short Method

An approximate indication of what size of heating plant and what amount of insulation is needed to assure compliance with the Critical List limitations can be gained by the use of the tables accompanying this text. In all important cases the accurate calculation method of one of the Codes should be followed and the resulting data submitted with the application.

The following facts should first be collected:

- (a) The net floor area of the dwelling unit, including only the heated living spaces measured from the inside faces of the outside walls and such living spaces as may be located in the basement or attic.
- (b) The "outside design temperature" of the location where the dwelling is to be built. This can be obtained from such standard reference sources as the Heating, Ventilating, Air Conditioning Guide published by the American Society of Heating and Ventilating Engineers. Where the location of the project is not listed, use data for the nearest city or 15° F. above the lowest recorded temperature.
- (c) The manufacturer's net rating of the heating plant which the builder proposes to use, corrected, if necessary, in accordance with Sections 514 and 515 of the Critical List. Any load used for domestic hot water heating or other purposes must be deducted. (Editor's note: Study Professor Konzo's discussion in this issue.)
- (d) The equivalent rating of the next smaller sizes of heating plants which the builder would use if his original choice proves too large to secure approval.

With these facts at hand, proceed as follows:

1. In Table 1 find the column for the "net floor area in square feet" nearest that of the dwelling under consideration. Follow this column down to the bold face figures in the band labelled "Maximum Permissible Heat Loss" and note the value.

2. Compare the net hourly output of the proposed heating plant with this value. If the capacity of the unit is *less* than or equal to the maximum permissible heat loss, it may be used. But, if it exceeds this value found in Table 1, it will not be approved, and a smaller plant having a rating lower than the value in the table should be selected.

3. In the next horizontal band, headed "Probable Furnace Rating," there is a figure representing a "round-figure" rating value. These values are repeated across several columns because units are seldom rated more closely than to 5,000 Btu differences. Stay in the vertical column for the floor area of the dwelling and note the furnace rating on which the remaining calculations are based.

4. The next section of the table has five lines, each related to an "Outside Design Temperature," representing the lowest outdoor temperature used in calculating heating loads. Select the line for the location of the dwelling and read across the column for the floor area of the dwelling. The figure found at this point should be noted for further use in Table 2. It represents the sum of the allowable heat losses through the floors, walls, and ceiling of the dwelling, expressed as arbitrary "total factors."

5. In Table 2 find the construction of walls, ceilings, and floors nearest to those employed in the project. For each construction two sets of "construction factors" are given; one for one-story houses and the other (in italics) for two-story houses. By trial and error, select the combination of construction factors that will add up close to, but not exceed, the total heat loss factor previously found in Table 1.

UNDER DEFENSE HOUSING CRITICAL LIST

Effective February 24, 1942

750	775	800	825	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400
49,500	51,150	52,800	54,450	56,100	59,400	62,700	66,000	69,300	72,600	75,900	79,200	80,000	80,000	80,000	80,000
45,000	50,000	50,000	50,000	55,000	55,000	60,000	60,000	60,000	70,000	70,000	70,000	80,000	80,000	80,000	80,000
166 250	217 306	194 282	173 258	220 310	180 264	202 289	167 250	134 214	208 296	177 261	148 229	212 300	184 269	158 241	136 214
357	421	393	366	425	374	403	357	316	409	368	333	414	379	347	317
500 700	575 790	542 750	511 712	580 796	520 722	553 763	500 700	452 642	551 773	514 716	473 667	567 780	527 732	488 686	453 644

- (a) In houses *without basements* the insulation should be of approximately equal thickness in walls, floors and ceilings wherever a choice is possible. Thus, the total factor may be divided in thirds to help find the nearest construction factors.
- (b) Houses built *with basements* containing a heating plant do not require insulation in the floor. Therefore, the total factor found in Table 1 may be divided approximately in half, and construction factors should be selected from Table 2 for the wall and ceiling only.
- (c) Always use the correct factor in Table 2 for the *number of stories* in the dwelling. This is important because the factors for one- and two-story houses differ in order to take into account important variations in the ratio of wall and window areas to floor and ceiling areas.

When the total factor in Table 1 can be satisfied by using insulation in a single area it is usually advisable to locate the insulation in the ceiling for summer comfort. Since the ceiling usually can be insulated at any future date, *at low cost*, however, consideration should be given to placing the original insulation in the sidewalls.

Example: One-Story Dwelling

The simplicity of this short-cut method is demonstrated in these examples. Assume a one-story frame house will be erected in Norfolk, Virginia or Houston, Texas), where the outside design temperature is 10° F. above zero. The house has a floor area of 825 square feet and the builder expects to use a heating unit of 60,000 Btu net hourly output.

In Table 1 in the column for 825 square feet floor area, it will be found that the maximum permissible heat loss is 54,450 Btu per hour. Therefore, the builder cannot secure approval of the 60,000 Btu unit and must adjust his plans accordingly.

(Continued on page 84)

TABLE II HEAT LOSS FACTORS
Construction Factors For Use in Table I

No.	Construction	One or Two Story	With- out Insula- tion	With Fiberglas Insulation		
				1"	2"	3"
WALLS						
1	Frame: clapboards or shingles wood sheathing, lath & plaster	1 2	256 307	131 157	88 106	66 79
2	Frame: clapboards or shingles $\frac{25}{32}$ " insulation sheathing, lath and plaster	1 2	173 208	105 126	76 91	59 71
3	Frame: rigid insulation, weather-protected with non-insulating surface $\frac{25}{32}$ " outside, $\frac{1}{2}$ " inside	1 2	180 216	108 130	77 92	60 72
4	Frame: asbestos-cement siding, Gypsum sheathing, Gypsum wallboard interior	1 2	422 506	165 193	102 122	74 89
5	Brick Veneer: wood sheathing lath and plaster	1 2	258 309	132 157	89 107	67 80
6	Plywood: on wood studs $\frac{3}{8}$ " outside, $\frac{1}{4}$ " inside, with one air space over $\frac{3}{4}$ "	1 2	404 484	162 194	103 124	77 92
7	Plywood: same as 6, with 2 air spaces	1 2	— —	141 169	93 112	— —
CEILINGS						
8	Plaster, Gypsum Wallboard or Plywood, no floor in attic	1 2	870 485	202 101	116 58	85 43
9	Plaster or Plywood as in 8 with wood floor in attic	1 2	320 160	146 73	95 48	70 35
FLOORS						
10	Single Wood floor on joists, no enclosed air space in floor	1 2	436 218	167 84	103 52	75 38
11	Single Wood floor as in 10, with air space enclosed by insulation	1 2	— —	145 73	94 47	70 35
12	Double Wood floor on joists, insulation enclosed in air space	1 2	306 153	127 64	86 43	65 33



[Defense House Heating]

Gravity Furnace On The First Floor

IN Rochester, N. Y., over a period of several years, an employee home building subsidiary of the Eastman Kodak Company erected several hundred houses incorporating what then were revolutionary ideas in design and equipment.

For example, houses without basements were sprinkled throughout the tract at a time when this idea was just beginning to attract attention. To heat these houses a then seldom tried idea was adopted—gravity, oil-burning furnaces on the first floor. Still more untried, then, was the use of a warm air piping system which did not enter the attic, but, instead, crossed from utility room to room served through wall stack placed horizontally between the elbow above the plenum and the high side wall register.

Thus the motive head which carried the warm air into the rooms was obtained from a straight up round pipe and a 45- or 90-degree elbow—totalling perhaps two feet of rise above the casting. The general arrangement may be seen in the plan and elevation.

Owners Like These Systems

In the years since these houses were sold, many have been converted to forced air heating by the application of a conversion blower to the original system. But many of the houses were so satisfactory to the owners that the original gravity systems are still in operation—without any change.

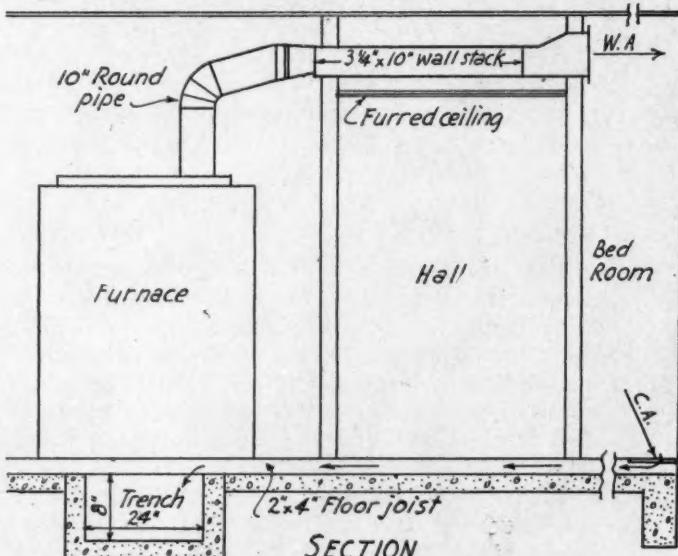
A few months ago several of these houses were inspected and owners quizzed. The net reply seemed to be that heating was satisfactory; floors were not cold; oil bills were reasonable in the opinion of the owners. In one or two instances

the owners had friends who had converted their systems to forced air and, interestingly enough, the gravity system owners seemed to feel that their houses were just as comfortable as were houses converted.

Flat Warm Air Distribution System

The systems studied have some minor variations of arrangement, but, in general, the layout is shown in the drawings.

The utility room is entered from the side of the house; is at ground level; the ceilings are usual



The elevation above shows the almost flat warm air runs across the hall with the rise made directly above the casing. The plan facing shows the short supplies and the unique return system which uses parallel joist spaces terminating in the front-to-rear trench.

height; the furnace stands approximately at the center line from front to rear and off center across the house.

The furnaces were generally Superflex, oil burning, gravity, 80,000 Btu output installed by Harry L. Fitch, Rochester contractor. The houses had a heat loss of 60,000 Btu. From the top of the casing a round leader pipe of Standard Code size was run up as high as the wall stack and elbow permitted. The small connecting hall (L-shaped) accommodates two warm air pipes; the utility room takes one pipe to the kitchen; the living room and other bedroom are separated only by the partition.

To cross the hall, wall stacking was used; laid horizontally and then furred in by a false ceiling. Thus no piping shows outside the utility room. Standard Code registers were used.

Returns Use Nearly Half Floor Area

The cold air return system was planned for ample size: first to allow plenty of area for the 2 by 4 joist spaces used and; secondly, to remove all possible cold air stratification at the floor. As the plan shows, three and four cold air grilles were placed along the outside wall, each grille emptying into a double joist space. Since the floor joists rest on the concrete slab which underlies the house there is, in effect, a series of parallel

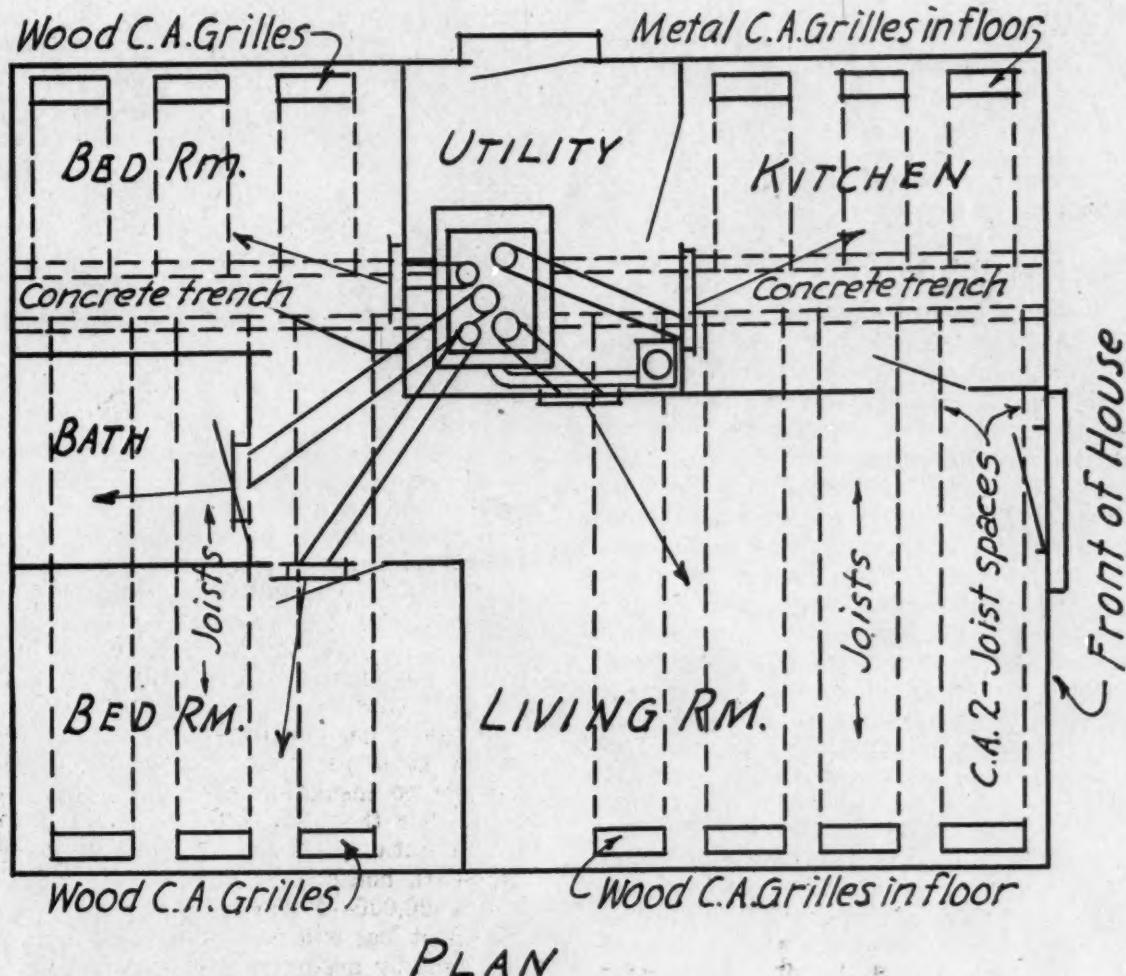
cold air paths under the floor. The use of several grilles eliminates all pockets or areas of cold air and gives direct access from windows into the return air system.

The parallel double joist spaces terminate in a concrete trench which runs from front to back of the house and is open under the furnace. The trench is thoroughly sealed at the ends and the joist-floor slab meeting line is also sealed. The joist space end is also sealed in concrete and mastic so no outside air can enter the return system.

Returns Balanced Front and Rear, Side to Side

By approximately balancing the number of return air grilles along each side of the house and also the number of grilles in the two front and two back rooms, wind direction pressure is compensated in theory and, seemingly, works out satisfactorily in operation.

Many of the original heating systems were installed by contractor Harry L. Fitch, Rochester, who worked with the architects and builders in adopting heating standards to their ideas for small houses. Many of the conversions to forced air have also been made by Mr. Fitch. The satisfaction given in these early installations of what we today call "low cost housing" is probably due to the contractor's insistence on adequate warm air and more than ample cold air return.



An Emergency Installation Code

[Furnace Rating and Selection]

By S. Konzo

Special Research Associate Professor
Engineering Experiment Station, University of Illinois

The Critical Materials List sets a maximum furnace capacity according to house ground area. Any heat loss over this capacity must be taken care of with insulation. This makes the furnace dealer an advisor to the builder—recommending the amount of insulation and where. We recommend a reading of this article on selecting furnace size and "Heating and Insulation Requirements for Defense Housing" in this issue. The two go together.

THE Defense Housing Critical List of Feb. 24, 1942 specifies a procedure to be followed in selecting the size of the furnace for a given dwelling. Since this procedure is somewhat different from that used up to this time some confusion has arisen as to the reason for certain provisions. Back of every move specified in the Critical List is the dominant motive of conservation of metal. If this motive is kept clearly in mind, the reason for some of the steps may become apparent. In this article the writer gives personal interpretations of some of the provisions in the Critical List, in view of the fact that no official interpretation on all points has been released.

Furnace Capacity in Relation to Dwelling Area

The Critical List specifies that the "register delivery" of a furnace shall not exceed 66 times the dwelling area in sq. ft., or 80,000 B.t.u. per hour, whichever is smaller. The term "66" is an average value obtained by the engineers of the Federal Housing Administration from a study of a large number of floor plans. The "dwelling area" may be determined from external dimensions of the house. For example, a single-story structure which is 20 ft. by 30 ft. may be considered as having a dwelling area of 600 sq. ft. Garage space or unfinished storage spaces are not to be included as dwelling area. If a given house has 1,000 sq. ft. of dwelling area, the register delivery is to be not greater than 66,000 B.t.u. per hour. It should be noted that the term "net hourly output capacity," referred to in the List is equal to the *register delivery* of a furnace and is *not the bonnet capacity*. Gravity warm-air furnaces are usually rated in terms of the register delivery, but forced-air furnaces are most commonly rated in terms of bonnet capacity, so that heating contractors should be definitely informed as to which value is stated in the catalogs.

In no case can the *register delivery* of a furnace exceed 80,000 B.t.u. per hour. Hence, any house having a dwelling area greater than 1,212 sq. ft. will be limited to a furnace having a delivery rating not over 80,000 B.t.u. per hour. Furthermore, the *heat loss* from such a house will be limited to a value less than 80,000 B.t.u. per hour. The net result of this limitation has been that:

- a) Furnaces having deliveries greater than 80,000 B.t.u. per hour have had no place in defense housing applications.
- b) Even prior to the ban on the manufacture of oil burners, oil-burning rates in excess of about 0.8 gallons per hour were too high.
- c) In many cases the use of insulation and storm sash has been necessary in order to keep the house heat loss below the ceiling value.
- d) Indirectly, the ruling has served to discourage the construction of large houses.

It is apparent that a flat value of "66" applied to all sections of the country places a heavier requirement upon houses built in colder climates than those built in mild climates. For example, a given uninsulated house having a dwelling area of 800 sq. ft. and built in a locality in which the outdoor design temperature is plus 20 deg. F. is assumed to have an hourly heat loss of 50,000 B.t.u. An identical house built in a locality in which the design temperature is minus 20 deg. F. will have a calculated heat loss of approximately 90,000 B.t.u. per hour. The Southern house will require no insulation since the actual heat loss is smaller than the ceiling value of 66×800 , or 52,800 B.t.u. per hour. On the other hand, the Northern house has a surplus heat loss amounting to 90,000—52,800 or 37,200 B.t.u. per hour. The heat loss will have to be reduced at least 41 per cent by means of insulation, storm sash, or

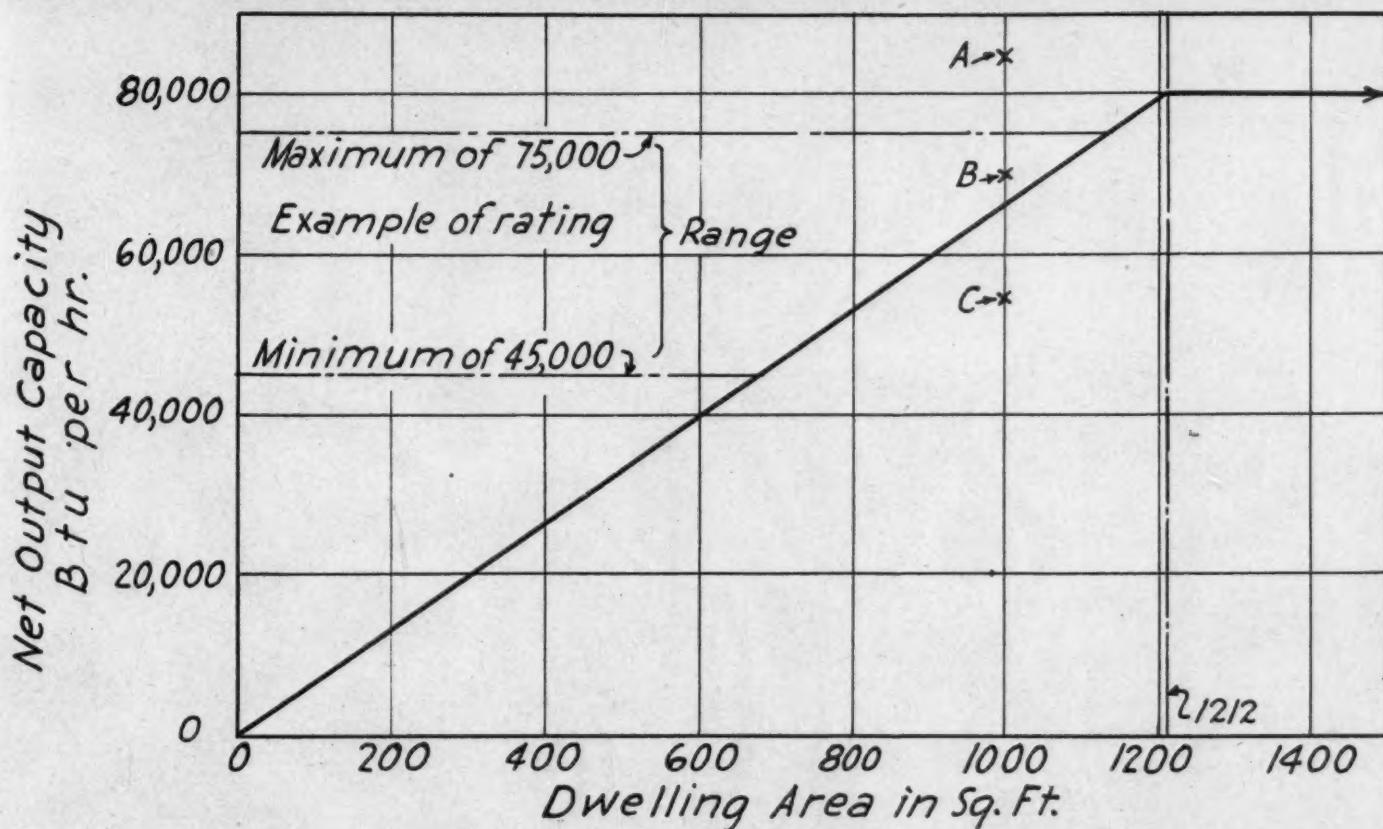


Fig. 1 Furnace ratings in relation to requirements of Defense Housing Critical List of Feb. 24, 1942.

both. The net effect will be that the initial cost of construction for the Northern house will be greater than for the Southern house.

On the other hand, the practically mandatory use of insulation and storm sash in the Northern house will provide much better comfort conditions, a smaller heating plant, and a lower fuel bill than would otherwise be obtained if storm sash and insulation were not used. It is of interest to note that if the heat loss for the Northern house is brought down to the same order of magnitude as that for the Southern house, the furnace size required in both houses will be the same. The heating problem is greatly simplified when houses are adequately protected, with the result that even a sub-standard heating installation may produce fairly acceptable results.

Maximum and Minimum Furnace Ratings

The diagram shown in Fig. 1 gives the relation between the "dwelling area" and the register delivery of a furnace as specified by the Critical List. An example is shown of a coal-fired furnace, which has been assumed to have a maximum rating of 75,000 B.t.u. per hour and a minimum rating of 45,000 B.t.u. per hour delivery. The horizontal lines for the maximum and minimum ratings intersect the diagonal line at 682 and 1136. This furnace is eligible to be used in any dwelling having dwelling areas that fall between 682 sq. ft. and 1136 sq. ft., provided that the heat loss is less than 66 times the dwelling area. This furnace is not applicable to houses having less than 682 sq. ft.; a smaller furnace having a

smaller rating must be used. This furnace may be used for houses having dwelling areas greater than 1136 sq. ft., provided that the heat loss of the house can be reduced to a value less than 75,000 B.t.u. per hour.

The points indicated by A, B, and C in Fig. 1 represent three houses, each having 1,000 sq. ft. dwelling area, and calculated hourly heat losses of 85,000 B.t.u., 70,000 B.t.u., and 55,000 B.t.u., respectively. Since the furnace we have assumed in the example is applicable to dwelling areas greater than 682 sq. ft., it is eligible for consideration in all three houses. However, before the Federal Housing Administration will release the construction of these buildings, the hourly heat loss of house A will have to be reduced from 85,000 B.t.u. to 66,000 B.t.u.; and that for house B will have to be reduced from 70,000 B.t.u. to 66,000 B.t.u. House C will require no further reduction in heat loss, since the point for house C falls below the solid line shown in Fig. 1.

The range of rating shown in Fig. 1 is a relatively new arrangement, and will require that manufacturers show not only the usual maximum deliveries, but also minimum deliveries. Manufacturers should provide the following catalog information:

- Furnace No.
- Maximum register delivery in B.t.u. per hour.
- Minimum register delivery in B.t.u. per hour.
- A note to the effect that the furnace is ac-

ceptable for all register delivery ratings between the two limits shown.

What Determines the Minimum Furnace Rating?

In an oil-fired furnace, if oil can be burned successfully only between the rates of 0.6 to 0.75 gallons per hour, then the minimum rating will be approximately 80 per cent of the maximum rating. In a recent ruling by the F. H. A. the minimum rating of a coal-fired furnace which is equipped with a radiator has been considered as being equal to 60 per cent of the maximum rating. Since the maximum rating of coal-fired warm air furnaces was based on a combustion rate of 7.5 lb. of coal burned per sq. ft. of grate per hour, the combustion rate corresponding to this minimum rating is equal to 60 per cent of 7.5, or a 4.5 lb. combustion rate.

It may be noted from a study of Fig. 1 that if the range of rating is made small, the manufacturers will be forced to offer a large number of furnace sizes in order to cover the field of output capacities. Since the W. P. B. desires to discourage the production of a large number of furnace models, obviously a wide range of rating would accomplish the purpose. On the other hand, if the minimum rating on each furnace is set at zero B.t.u. per hour, then a single furnace could be built having a maximum rating of 80,000 B.t.u. and a range of rating also equal to 80,000 B.t.u. per hour. The net result of having too wide a range of rating would be that this single furnace would be used regardless of whether the heat loss were 15,000 or 80,000 B.t.u. The use of greatly oversized equipment when a smaller furnace will accomplish the purpose is contrary to the main purpose of the metal conservation program. Hence, the range of rating has recently been set by the F.H.A. at values which were reasonable compromises between too wide and too narrow a range.

Method of Rating a Furnace

Since the present outlook primarily favors hand-fired, coal-burning equipment this discussion of furnace ratings will be taken up with such equipment in mind. The present status of the rating situation is such that a furnace manufacturer is at a loss as to how to rate the so-called "PBA-18", "defense" or "victory" model furnaces, that are practically the only types that will be made for new house work. The rating procedure as stated in the Critical List was presented in the second of this series of articles, and adheres to the methods of rating given in the Standard Code and Technical Codes of the National Warm Air Heating and Air Conditioning Association. As far as the writer can ascertain, this method of rating is still in force for furnaces being used for publicly financed defense housing projects, all of which are engineered by government engineers or engineers connected with the construction project. The ordinary heating contractor has little to say about either the rating

of such furnaces or the method of installation.

Furnaces which are to be installed in defense housing projects that are to be built with private funds come under the scrutiny of the Federal Housing Administration. This group has seen fit to issue a method of rating that is at variance with that given in the Critical List. The main provisions of this method of rating are that:

- a. Furnaces which have radiators are given a decided edge over furnaces which do not have radiators.
- b. The range of rating for furnaces having radiators is quite large, whereas the range for furnaces without radiators is small.
- c. The minimum allowable ratio of heating surface to grate area is still 15 to 1.

The F.H.A. engineers contend that when radiators are used that lighter gauge steel can be used in the radiator than in the main drum of the furnace and that as a result, less steel will be required for the entire furnace than when all the heating surface is placed on the primary side, as is done on many of the newer models. The contention is also made that furnaces having radiators operate on lower flue gas temperatures and show higher efficiencies than furnaces having the same heating surface, but with all the heating surface on the primary side.

No attempt will be made in this article to discuss the pro's and con's of the contentions offered. The subject is under discussion and it is hoped that a revised ruling will be offered that will remove the discrepancies between the F.H.A. ruling and the ruling in the Critical List.

Importance of Heating Surface

Regardless of which ruling is used, both have placed a limitation on the minimum amount of heating surface per unit area of grate surface. The minimum allowable ratio is 15 to 1. Tests made in the University of Illinois Engineering Experiment Station Laboratory and which are reported in the book on "Gravity Warm Air Heating" show that the flue gas temperatures increase as the ratio becomes smaller. The 15 to 1 ratio was arbitrarily established as a minimum, since with ratios less than 15 to 1 the flue gas temperatures tended to exceed 1,000 deg. F. when a 7.5 lb. combustion rate was maintained. The Standard Code and the Technical Code do not recognize ratios less than 15 to 1. A furnace having a ratio of say 10 or 12 to 1, if fired at a 7.5 lb. combustion rate will produce flue gas temperatures greatly in excess of 1,000 deg. F. with the result that the fuel economy will be low and the hazards of fire greatly increased. Neither end result is worth the saving in metal that might be effected.

In this connection, the test results of the Anthracite Industries are of interest. Tests made on a straight-drum, open-dome type furnace showed that the loss of draft from the ashpit to the smoke collar was exceedingly small, with the

(Continued on page 92)

AMERICAN ARTISAN

SHEET
METAL
SECTION



DEVOTED TO SHEET METAL CONTRACTING AND FABRICATING

IT'S A GREAT SHEET FOR PAINTING

NEW
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CONTINENTAL STEEL CORPORATION, Kokomo, Indiana
(Plants at Cuyahoga, Kokomo, Indianapolis)



SUPERIOR
CONTINENTAL STEEL CORPORATION

Pattern Development for Heavy Gauge Blow Pipe Fittings*

By William Neubecker

A LARGE percentage of sheet metal contractors are now engaged in installing complete new, or revamping and altering and adding to existing duct systems, to collect and dispose of fumes, waste material in wood working, metal working, and other processing establishments.

For the benefit of sheet metal workers in general, a series of articles will be presented covering patterns required for fittings made of heavy gauge metal used in blowpipe systems. Pattern developments for the various types of fittings, illustrated on the various plates reproduced from the book "Standard Practice in Sheet Metal Work," will be shown.

The first problem to be solved will be the development of patterns for pieced elbows made of heavy gauge metal of the type shown in Fig. 22 on Plate No. 9, for either welded or riveted construction.

Avoiding Unnecessary Drafting

When obtaining patterns for pieced elbows, it is not necessary to draw the entire elevation of the elbow to obtain the angle of the miter or joint line. By a simple rule, with the aid of a protractor, the angle of the miter line can be found, no matter what the throat or diameter of the elbow may be, or regardless of the number of pieces it contains. If the patterns for a seven pieced elbow had to be laid out, the throat of which was 24 inches and diameter 12 inches, it would hardly be practical to first draw the full quadrant in order to obtain the angle of the miter line. Using

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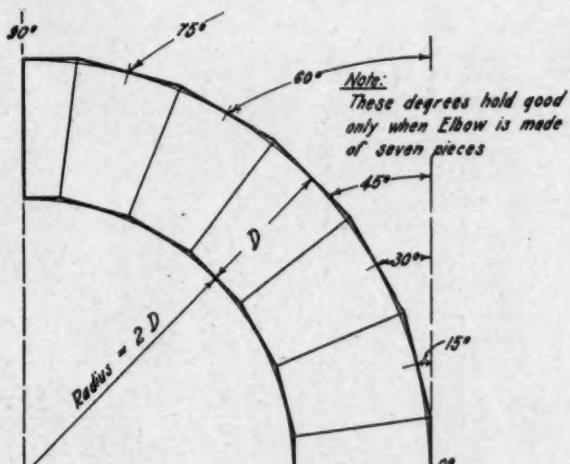


Fig. 22. DESIGNING OF ELBOWS

the protractor as illustrated in Fig. 1 much time can be saved.

As a rule all elbows join together and form an angle of 90 degrees or a right angle, no matter how many pieces they contain. The angle at which the elbow is to be connected, forms the basis by which the angle of the miter line is computed. Assuming that a set of patterns are wanted for 2, 3, 4, 5, 6 and 7-pieced elbows, each having similar throat and diameter dimensions, we would proceed as follows: Extend the line of the base of the protractor as shown by *U-W*. Make *U-V* equal to the desired throat radius and *V-W* the desired diameter. From *V* and *W* erect vertical lines as shown. In computing the angle of the miter line in elbow drafting, the end piece counts one and each middle piece counts two. As a two-pieced elbow has but two end pieces and the angle of the elbow when completed is to be

90

90 degrees, then $\frac{90}{2} = 45$ or the degree at which

a line must be drawn from the center *U* until it intersects the vertical lines of the pipe erected from *V* and *W*. If this two pieced elbow was to

36

have an angle of 36 degrees, then $\frac{36}{2} = 18$, the

degree at which a line must be drawn from the center *U* as before.

For a three pieced elbow, the two end pieces count two and the one middle piece counts two

90

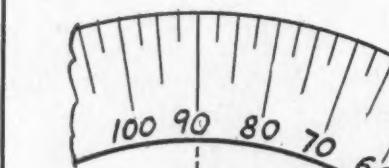
which equals 4; $\frac{90}{4} = 22\frac{1}{2}$ or the degree at which

ELBOW TABLE

Rad. of Throat in Diameters of Pipe	Number of Diameters of straight pipe of Equivalent Resistance	Number of Pieces Elbow is to have
1	10	5
1½	6	6
2	4½	7
2½	4½	7
3	4½	8
4	5½	9

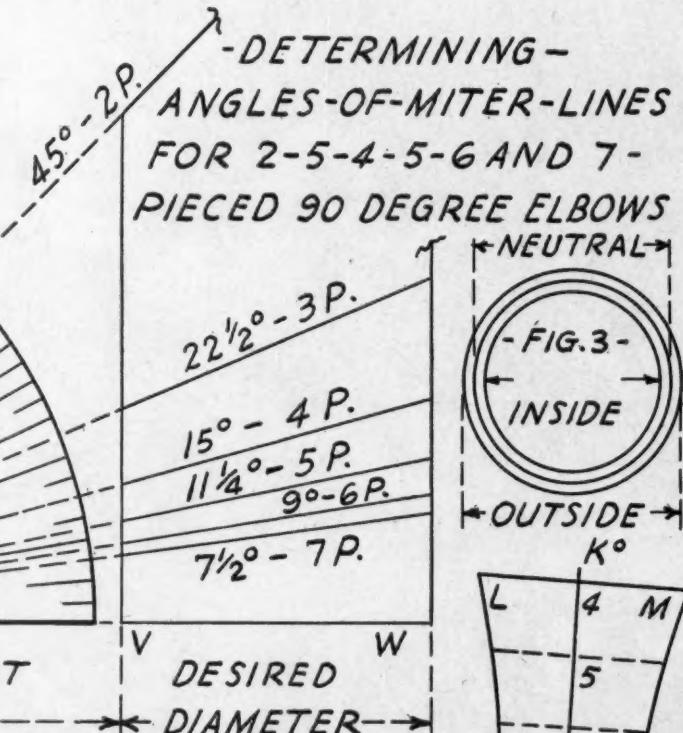
DEVELOPING PATTERNS FOR HEAVY GAUGE
PIECED ELBOWS FOR EITHER WELDED OR
- RIVETED CONSTRUCTION - * -

- PROTRACTOR -

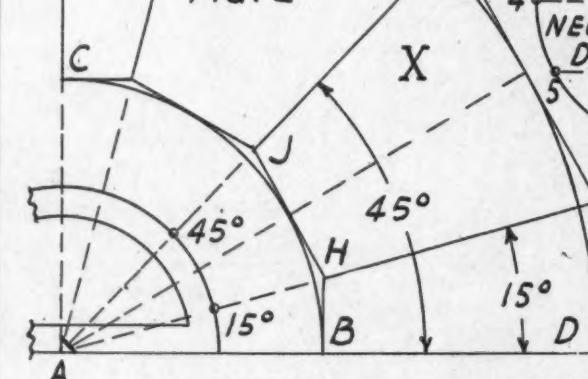


-FIG. 1-

DESIRED THROAT
← RADIUS →

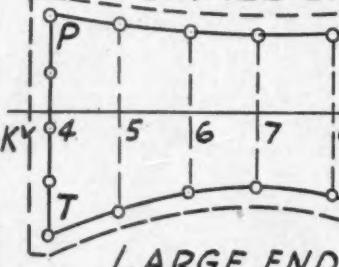


-FIG. 2-



PATTERNS FOR
LAPPED JOINT
RIVETED SEAMS

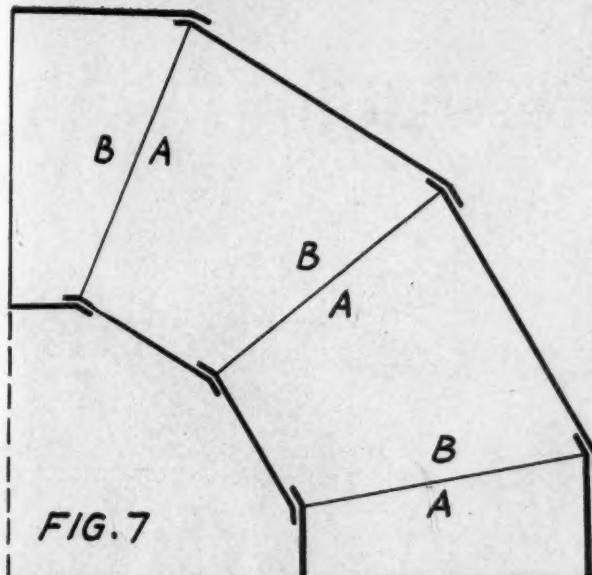
SMALL END



LARGE END

-FIG. 6-

PATTERN FOR BUTT
JOINT WELDED SEAM
ALL RIGHTS RESERVED
* BY-W.N.-



SECTIONAL VIEW OF ELBOW SHOWING THE SMALL END JOINING THE LARGE END OF EACH PIECE

a line must be drawn from the center *U* until it intersects the pipe lines as shown. In similar manner as shown, we obtain the angles of the miter or joint lines for 4, 5, 6 and 7-pieced elbows.

For example; a seven-pieced elbow is desired. Two end pieces count 2 and the other five pieces

$$\text{count } 5 \times 2 = 10; 2 + 10 = 12; \frac{90}{12} = 7\frac{1}{2} \text{ degrees}$$

which represent the angle of the miter line. Suppose a special four-pieced elbow is to be made, having an angle of 30 degrees, the same rule is employed. The two end pieces count 2 and the

$$\text{other two pieces count } 4. 4 + 2 = 6; \frac{30}{6} = 5 \text{ degrees}$$

degrees or the angle of the miter line.

In this case a line would be drawn from the center *U* through the fifth degree on the protractor until it intersect the vertical lines of the pipe. This rule holds good regardless what the dimensions of the throat or the diameter may be.

Simplified Method of Obtaining Elbow Pattern Dimensions

In Fig. 2 is shown a full elevation of a four-pieced elbow, which will clearly show the principles involved in so small a drawing.

All that is really necessary is the piece marked *X*, from which all dimensions are obtained for either a welded or riveted elbow pattern constructed from heavy gauge metal. In this case *A-B* is the given dimension of the throat and *B-D* the diameter of the elbow. Note how the protractor is set on the center line *A-E* and the elevation drawn for a four pieced elbow.

Radial lines are drawn from *A* through the 15 and 45 degree, to intersect the vertical lines

erected from *B* and *D* at *H* and *F*. From the center *A*, the throat *B-C* and heel *D-E* is struck and the middle piece *F-G-J-H* drawn. While the entire elevation of the elbow is shown, all that is really necessary is the middle piece *X*. Even this could be omitted in practice, because this same *X* can be obtained by tracing *H-F-D-B* opposite the line *B-D* which will then be an exact duplicate of *X*.

Finding the Neutral Diameters

In drawing the diameter *B-D*, one must know the inside diameter of the elbow and what gauge metal is to be used. The diameter *B-D* should always be the neutral or mean diameter from which the stretchout must be obtained, because at that point the metal neither gains nor loses in length during the operation in rolling. This is made clear by referring to Fig. 3 which shows the inside, outside and neutral or mean diameter; in other words, the center line of the thickness of the metal used.

Assume that No. 14 gauge metal which is $\frac{5}{32}$ inch in thickness will be used for a 12-inch inside diameter elbow. This would make the outside diameter $12\frac{5}{32}$ and the neutral or mean diameter $12\frac{5}{16}$. Thus *B-D* in Fig. 2 represents the neutral diameter in question. Now take a tracing of the center piece *X* or the double of *F-H-B-D* and place it in Fig. 4 as shown by the solid lines $1^1-7^1-7^0-1^1$; also draw the center line *K-L*.

Developing Patterns for Welded Elbow

To the left in its proper relative position draw the semi-neutral section; which divide into equal divisions, in this case six as shown by the small figures 1 to 7. Through these divisions at right angles to *K-L*, draw lines to intersect the solid line as shown from 1^1 to 7^1 . In developing the pattern shapes for elbows which are to be welded or riveted, the fish tail type will be used. This shape allows the seams to alternate on opposite sides, which avoids two seams coming together.

Now draw any line in Fig. 5 as K^0-L^0 on which place twice the number of spaces contained in the semi-neutral section in Fig. 4 as shown by similar numbers in Fig. 5, being careful to start with number 4 point, because a fishtail pattern is required. Through these small figures at right angles to K^0-L^0 draw lines indefinitely as shown. Now using the dividers and measuring in each and every instance from the line *K-L* in Fig. 4 take the various distances to points on the solid line 1^1 to 7^1 and set them off in Fig. 5 on similar numbered lines, measuring in each and every instance from the line K^0-L^0 .

Through points of intersection so obtained, trace the irregular curves from *M* to *N* and *O* to *L*. Then will *L-M-N-O* be the pattern for the middle pieces, and either *4-M-N-4* or *4-L-O-4* (both being alike) the pattern for the end pieces for butt joint welded elbows. The method just described is geometrically accurate for any given size for butt welding.

(Continued on page 86)

Tanks — 9 Stories High

IN THE January, 1942, Directory issue, there appeared a description of the fabrication and erection procedure used by the Goergen-Mackwirth company of Buffalo, N. Y. to install several dozen bins, tanks and hoppers in the Buffalo plant of General Mills. Not described in that article were three groups of bins of a completely different variety—these bins range from three floors high to nine floors high and are used for the storage of grain, flour, and finished product cereal.

In the three groups, the "A" bins (shown in the drawings) are approximately 82 feet high and extend from the third to the ninth floor; the "B" bins are approximately 106 feet high and extend from the first to the ninth floor; the "C" bins are approximately 45 feet high and extend from the sixth to the ninth floor.

The tanks were manufactured by the Monarch Tank and Metal Fabricating Company of Perry, N. Y., and were erected by the Goergen-Mackwirth company.

The construction and erection of these tanks are described by John J. Yager, president, and Gilbert J. Yager of Goergen-Mackwirth as follows: (See elevation, right.)

"The A bins were fabricated as follows: 10'-10" of square to round (14x30 to 58" diam.) four lengths of 10 gauge galvanized 11'-9", four lengths of 12 gauge galvanized 15'-7", nine lengths of 14 gauge galvanized 27'-3 1/4", and six lengths of 16 gauge galvanized 21'-4".

"Holes were provided for the bins when the concrete floors were laid. The A bins were 3 rows deep by 6 rows long or 18 bins in number. All joints were butt welded, half welded in the field, half welded in the shop. The bins were trucked into Buffalo in two length pieces, hoisted to the various floors, and then hoisted or dropped through the floor into position.

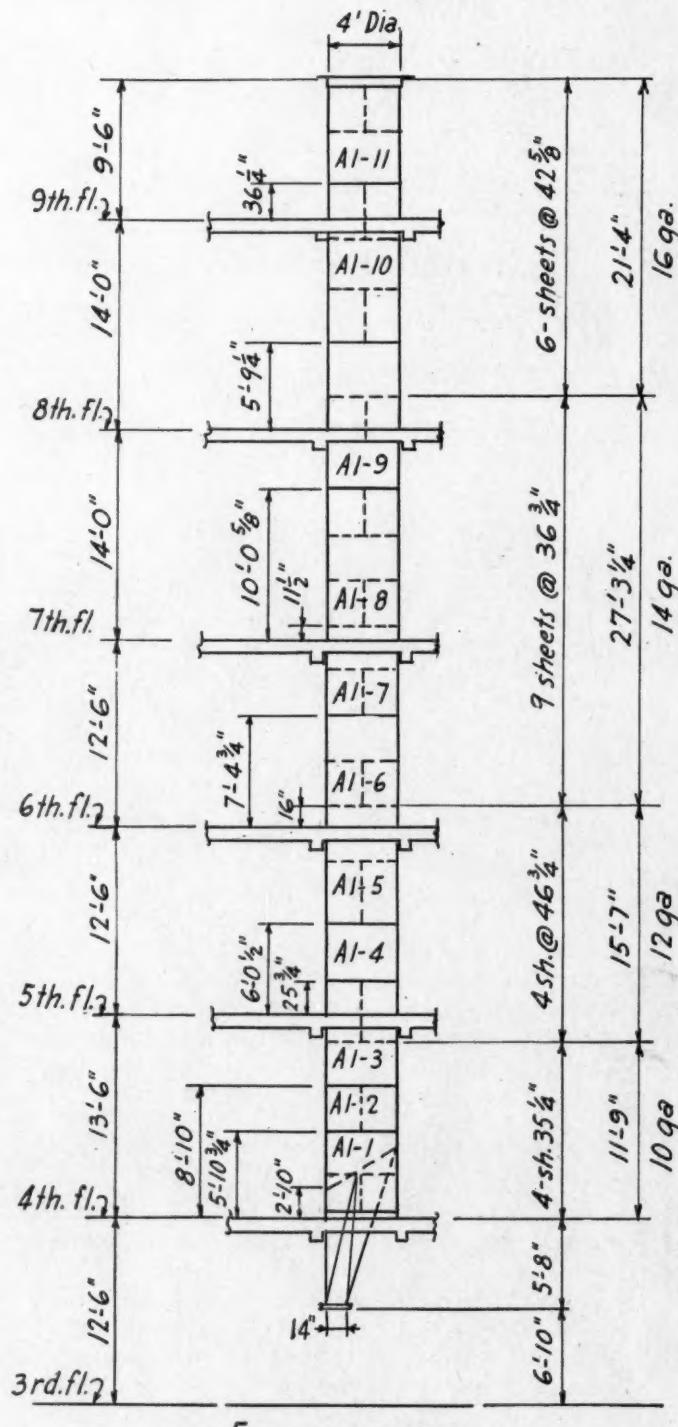
"The double section at the bottom contained the square to round already welded in place and a 3x3x1/4-in angle ring welded on the circumference to carry the entire load of the 82-foot bin. This bottom section was dropped through the 4th floor opening, turned to the proper position and aligned with the hole through the floor above. The next section was hoisted into place, tack welded every few inches around the circumference and the next bin set and positioned.

"We handled and placed in position all sections of the 18 bins on each floor before proceeding to the floor above.

Acceptable Joints Were Our "Big" Problem

"On the first few joints we tried an angle ring form on the inside of the bin to round out each circle so that the joints would butt exactly and closely for the welder. This meant two men in-

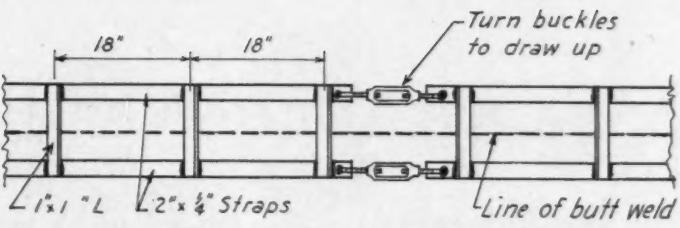
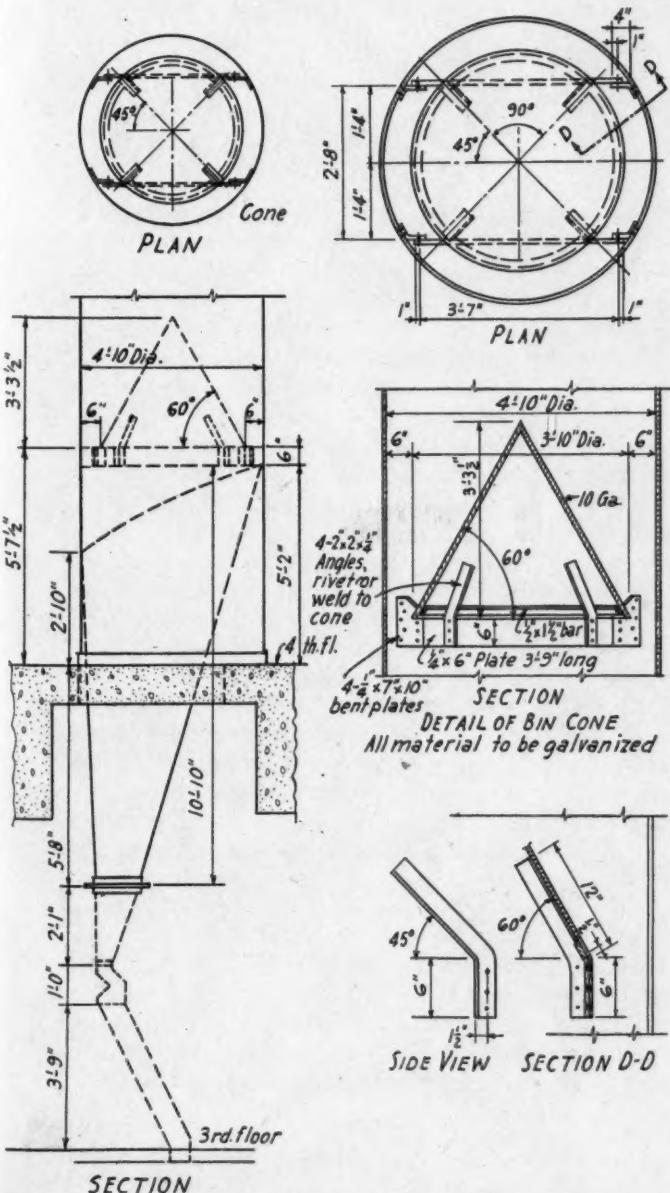
side each bin on a swinging scaffold. We found this impractical and finally settled on a man and the welder at each joint. The section was held in place by block and tackle from the floors above, dropped to butt and tack welded in six or seven places by the welder. Then while part



Type "A" bins are 8 1/2 floors high, constructed as shown. The dotted lines indicate welds made in the shop; the solid lines are field welds joining sections together. Note sections were welded to permit slipping each section through a floor to eliminate welding at floor lines.

of the crew changed block and tackle to roll into place the next section, one man and the welder traveled the circumference with hammer and pinch bar bringing every joint into exact butt and tack welding every few inches of each circumferential joint. Another welder followed along behind and welded each joint solid and dust tight. This cycle of operations was completed for each of the 10 joints of the 18 A bins.

"To make the inside of each bin smooth on the welded joints and ledges, a man was lowered on a swinging scaffold from the 9th floor to the 3rd floor sandblasting each joint clean. Another man, again lowered from the 9th to the 3rd floor, metallized each joint with an oxygen acetylene torch that flame sprayed liquid zinc into the sandblasted joint. For the sandblasting and metallizing operation the air compressor, oxygen and acetylene tanks, and other materials were placed on the 3rd floor at the bottom opening of the bins. Air hose for the sandblast gun; air, oxygen, and acetylene hoses for the metallizing gun were hoisted from the 3rd to the 9th floor inside each bin as the joints were metallized. The swinging scaffold was suspended from a special angle iron frame over the bin. The operator mounted all of his equipment in place on



The special welding hoop developed to hold edges in exact abutment while the final welding was made. Edges once adjusted by pinch bar and the hoop tightened, the weld could be run all around the tank without interruption.

the scaffold, donned his mask, and was lowered from joint to joint after a prearranged signal arrangement with the man on the rope. While the erection of the B bins was being completed the sandblasting and metallizing of the A bins was proceeding as outlined above.

"The B bins were fabricated as follows: 10'-10" of square to round (14x30 to 58" diam.), six lengths of 10 gauge galvanized 19'-6 $\frac{1}{4}$ ", six lengths of 12 gauge galvanized 23'-4 $\frac{1}{2}$ ", nine lengths of 14 gauge galvanized 35'-0 $\frac{3}{4}$ ", and six lengths of 16 gauge galvanized 23'-6 $\frac{1}{2}$ ". The B bins were erected in exactly the same manner as the A bins and were 21 in number. The one structural difference in erection was the field welding of the square to round in the lower double section of each B bin. There were 14 joints in every one of the 21 B bins to weld, sandblast, and metallize.

"The C bins were erected in exactly the same manner as the A and B bins to be welded, sandblasted, and metallized. The C bins were constructed of 14 gauge and 16 gauge galvanized iron.

Metallized Welded Joint Is a New Idea

"Before this installation, as far as we could learn, all such bins on previous jobs had been constructed with riveted seams and joints sweat soldered for dust-tightness. The idea of butt welding, sandblasting, and metallizing was tried because of the smoother interior surface obtained. With this all-welded bin the entire bin can be and is, on the job, supported on the angle iron circle around the bottom.

"One last detail which we think is interesting involved the method of holding the section joints in alignment while the final butt weld was made. After some experimenting, we developed the parallel strap hoop shown in a detail sketch. The hoop was placed around the joint after the butted edges were aligned by pinch bar and the turn buckles run up to hold the two edges true. By spacing the parallel straps as shown we could weld all around the joint without changing the hoop."

Details of the inserted hoppers and cones which make up the complicated lower section of all bins. The hopper was welded in place in the shop; so was the cone; so the complete section was placed as a unit.

Fabricating War Products

[2M, Cook's Tool Box, M-1937]

By Ernest E. Zideck
Sheet Metal Consulting Engineer

This month's "war product" is a simple little box which is well suited to small shop facilities because it is riveted. But if the box is spot welded, costs will be sharply cut and mass production will get the order. Mr. Zideck gives a complete suggested method to begin production.

APPARENTLY the M-1937 tool box as disclosed in blue prints and specifications of the Quartermaster Corps was designed with the intent of having the boxes fabricated in small sheet metal shops possessing only shearing, notching, drilling, braking and riveting facilities. Apparently the cost of constructing the boxes according to plans, blue prints and specifications on hand was a secondary consideration, the intent of giving work to the sheet metal worker governing the design and construction.

This comment is offered because, if we wanted the boxes quantitatively produced according to the best known methods at a much lower cost, we would provide for a spotwelded construction throughout, the galvanizing being done after the box is wholly completed. We would also have the Box Body Ends on the inside of the flanges instead of on the outside. And we would select a hasp, or its fastening to the cover, that would not interfere with the other fastenings provided in the cover.

Suggested Fabrication Procedure

But the shop securing an order for the boxes as designed and specified, will undoubtedly proceed with the fabrication as follows: 1, make marking patterns for each of the eight shop-fabricated parts; 2, shear the blanks to the sizes of the patterns; 3, mark each blank separately for notch-outs, braking points, holes, etc.; 4, do notch-outs by hand shears; 5, drill the holes one by one in each of the blanks; 6, do braking-forming by hand or power brake, with a box brake to complete the narrow portion brakings; 7, complete the box by riveting the component parts, in their order, over a mandrel or a stake.

The shop having a punch press and easily adjusted dies might try the notchouts by these means. But the series of holes for rivets can not be provisioned in a punch press without quite costly die sets and gage-set-ups so, in view of

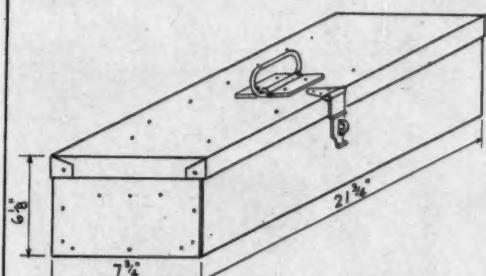
the fact that all shops making such dies and means are pre-occupied with other war work, the prospective fabricator will have his troubles getting the dies and means. Same applies in a lesser degree to drill jigs for hole drilling so if the order for the boxes does not run into more than ten thousand, the small shop might just as well proceed with the work in the manner enumerated above.

Layout of Parts in Drawings

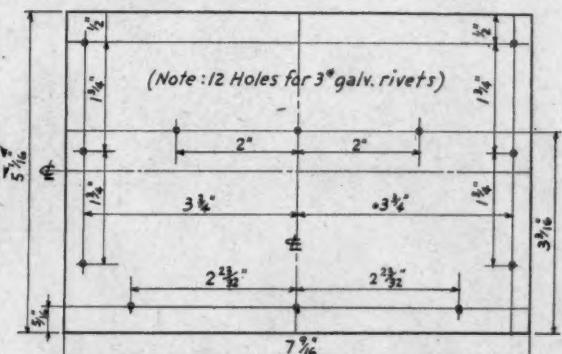
The accompanying Layouts, numbered 1 to 8, give the shapes and the dimensions of the individual blanks, with directions for brakings and placement of holes. The thickness of the galvanized sheets used in the boxes is specified to be .0598, which could be a heavily coated 18 gauge, or an odd 17 gauge. Anyhow, the Layouts are made on the basis of a 16 ga., (.0625), and the tolerance in these boxes is .0010 plus or minus, so that the layouts will be found correct. Only the Part 8, shop-fabricated, is of a heavier gauge, 14. All the other Parts are made up from sheets (galvanized), the thickness of which approaches most closely to the specified .0598.

The hinges, Part 9; the hasp set, Part 10; and the handle set, Part 11; it will be best to purchase, because these items it would be difficult and costly to make by hand. These items may be bought and galvanized after purchase, at a cost of about 17 cents per box, totalling \$85.00 per 500 boxes, on which basis we shall figure the materials and labor costs. For a small shop it would be impossible to process more than 500 boxes at one time, and the hand operations employed in making the boxes would cost just as much, whether the number worked on is 500 or 5,000. Materials will cost so much per box, and the larger quantity worked on at one time can not change material costs greatly.

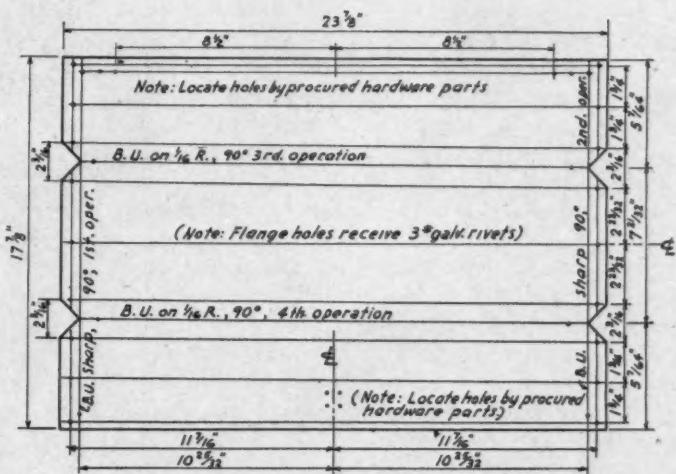
In the drawings, Layout 1 refers to the box body, the blank furnishing the sides, the bottom,



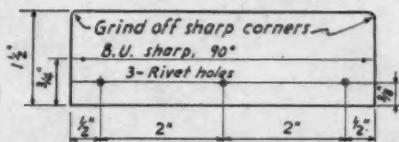
M-1937 Tool Box, Perspective View



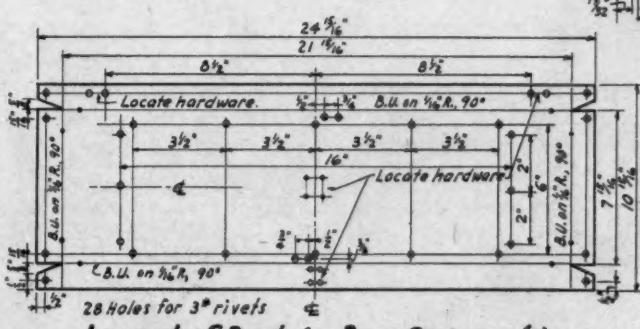
Layout of Part-2, Box Ends (2)



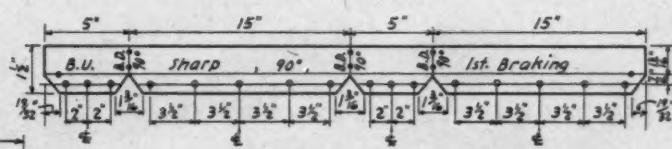
Layout of Part-1, Box Bottom and Sides (1)



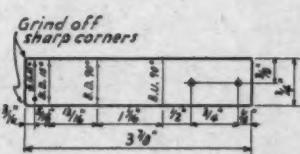
Layout of Part-3, Shelf Brackets (2)



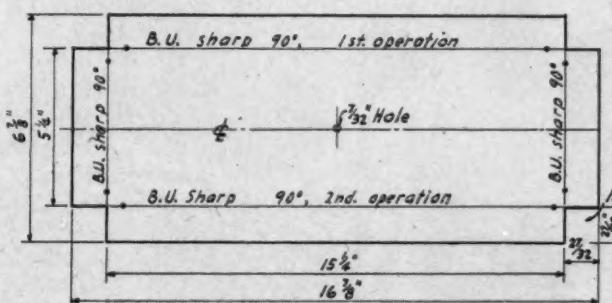
Layout of Part-4, Box Cover (1)



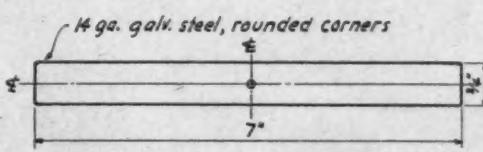
Layout of Part-5, Inside Cover Frame (1)



Layout of Part-7, Swinging Latch Keepers (2)



Layout of Part-6, Compartment Cover (1)



Layout of Part-8, Swinging Latch

and the end flanges for riveting on the two box ends, detailed in Layout 2. Detail 3 shows the blank, braked to an angle, the part being a bracket riveted on the inside of the two box ends, the brackets supporting a shelf, not shown in these specifications. Layout 4 details the blank for the Box Cover, with all the rivet holes placed as required, although the rivet holes for the hinges, the hasp-set and the handle set, Parts 9, 10 and 11, must be placed to fit the holes in the hardware. Layout 5 furnishes the blank for the inside Compartment Frame, which is riveted to the inside of Cover, 4. Layout 6 details the blank for the Compartment Cover; while Detail 7 is formed into brackets, riveted inside the Box Cover, by which the Swinging Latch, shown in 8, holds the Compartment Cover, 6, in position.

Sheets Required for 500 Boxes

Parts 1, 84 sheets 24 x 108, galvanized, .0598

thickness.

Parts 2 and 3, 20 sheets 24 x 96, galvanized, same gauge.

Parts 4, 5, and 7, 65 sheets 30 x 96, galvanized, same gauge.

Parts 6, and partly Parts 7, 18 sheets 30 x 120, galvanized, same gauge.

Parts 8, 1 sheet 24 x 120, galvanized, 14 gauge.

Combined material cost, inclusive of hardware = approximately \$465.00.

Figuring on the average of \$1.00 per work hour, labor will run up to \$632.50; materials were \$465.00; so that the 500 boxes, without overhead and profit, would cost \$1,097.50. A single box would cost us in material and labor, roughly \$2.20; and the lowest price any of the small shops could quote on the boxes, would be \$3.50 each.

Costs of Operations, Inclusive of Material Handling

Gage Set-Ups and Inspections During Operations

Shearing:

500 blanks by Pattern 1, two men operating, 5 work hours.

1000 blanks by Pattern 2, two men operating, 6 work hours.

1000 blanks by Pattern 3, small squaring shears, 1 man, 4 work hours.

500 blanks by Pattern 4, two men operating, 5 work hours.

500 blanks by Pattern 5, two men operating, 6 work hours.

500 blanks by Pattern 6, two men operating, 5 work hours.

1000 blanks by Pattern 7, squaring shears, 1 man, 4 work hours.

500 blanks by Pattern 8, 14 gauge, large shears, 3½ work hours.

Total work hours, shearing = 38½.

Marking:

Parts 1, 2000 scratch marks, 17,000 dots, 17 work hours.

Parts 2, 12,000 dot marks, 8 work hours.

Parts 3, 5000 dot marks, 7 work hours.

Parts 4, 2000 scratch marks, 24,000 dots, 23 work hours.

Parts 5, 2500 scratch marks, 12,000 dots, 12 work hours.

Parts 6, 2000 scratch marks, 4500 dots, 9 work hours.

Parts 7, 10,000 dots, 7 work hours.

Parts 8, 500 dots, 3 work hours.

Total work hours, marking = 86.

Notching:

Parts 1, 4000 hand shear cuts, 7 work hours.

Parts 4, 4000 hand shear cuts, 6 work hours.

Parts 5, 4000 hand shear cuts, 8 work hours.

Parts 3 and 8, 3000 corners rounded, 4 work hours.

Total work hours, notching-rounding = 25.

Drilling:

Parts 1, 17,000 holes, 25 work hours.

Parts 2, 12,000 holes, 18 work hours.

Parts 3, 3,000 rivet holes, 5 work hours.

Parts 4, 20,000 rivet holes, 30 work hours.

Parts 5, 8000 rivet holes, 10 work hours.

Parts 6, 500 rivet holes, 6 work hours.

Parts 7, 2000 rivet holes, 5 work hours.

Parts 8, 500 rivet holes, 4 work hours.

Total work hours, hole drilling = 103.

Braking—Forming:

Parts 1, 2000 brakings, 17 work hours.

Parts 3, 1000 brakings, 4 work hours.

Parts 4, 2000 brakings, 16 work hours.

Parts 5, 2000 brakings, 18 work hours.

Parts 6, 2000 brakings, 9 work hours.

Parts 7, 4000 brakings, 15 work hours.

Total work hours, braking-forming = 79.

Riveting:

Parts 2 into Parts 1, 9000 rivets, 50 work hours.

Parts 3 to Parts 2, 3000 rivets, 17 work hours.

Parts 9 and 10 to Parts 1, 4000 rivets, 35 work hours.

Parts 4, corners, 2000 rivets, 30 work hours.

Parts 5 into Parts 4, 8000 rivets, 40 work hours.

Parts 11 to Parts 4, 2000 rivets, 16 work hours.

Parts 10 to Parts 4, 1500 rivets, 12 work hours.

Parts 7 to Parts 4, 2000 rivets, 16 work hours.

Parts 4 to Parts 9, 2000 rivets, 35 work hours.

Parts 8 to Parts 6, 500 rivets, 10 work hours.

Total work hours, riveting = 261.

Final Assembly

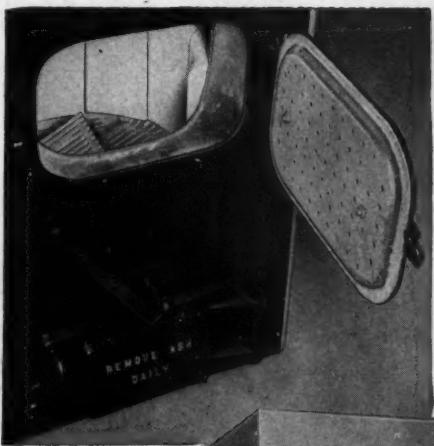
Adjustments

Shop Inspection:

40 work hours.

Total of Work Hours estimated on 500 boxes = 632½.

It checks with the need of today for
heating war workers' homes



Notice the large coal
firing opening, un-
usually capacious
for a unit this size.
The easy grate oper-
ation is also shown.



Burns anthracite or bituminous ✓

Hand-fired operation ✓

Ready for quick shipment ✓

Speedy installation ✓

(One-piece unit with clip on jacket)

Fitzgibbons welded steel construction ✓

Designed to government specifications
and

Built to FITZGIBBONS standards ✓

The

FITZGIBBONS 80 FWA WARM AIR CONDITIONER

Get complete data on this unit —
the coupon brings the bulletin.

AA-7

Fitzgibbons Boiler Company, Inc.
101 PARK AVENUE, NEW YORK, N. Y.

Send me the bulletin about the
Fitzgibbons 80 FWA.

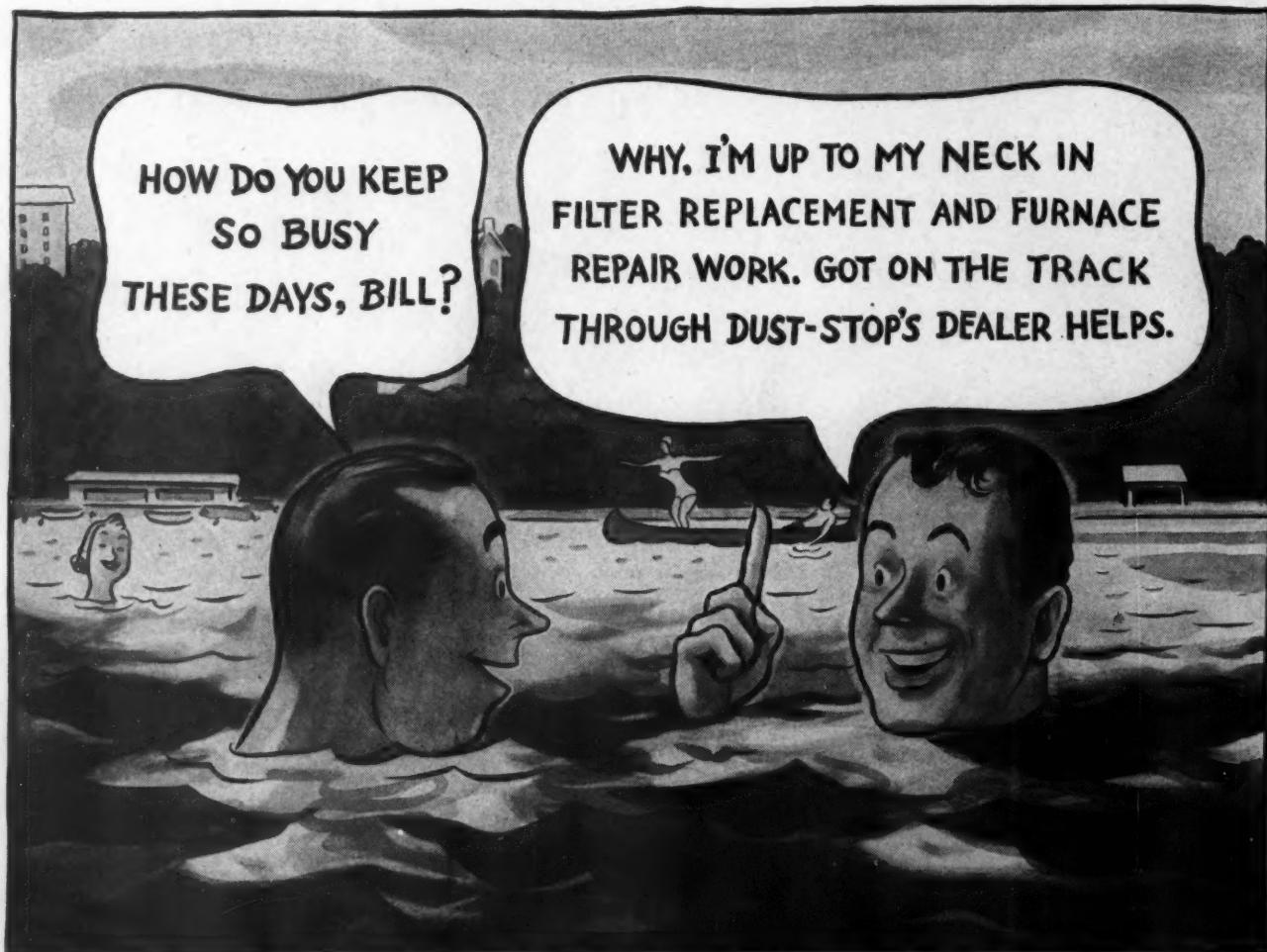
Name.....

Address.....

City and State.....

Figurin' the Angles

◀ How Resourceful Furnace Dealers
are Getting New Business ▶



Dust-Stop's Free 1942 Sales Plan Can Get You Business

WHILE THE WAR has stopped part of your business, it has made others of your services easier to sell.

Various agencies of the Government are encouraging heating-efficiency. And people know that their furnaces have to last. So they're more willing than ever before to spend maintenance money.

There are plenty of furnace repair and cleaning jobs. And lots of filter replacements. On filter replacements alone you can net up to \$3 a year on each warm-

air furnace you service. What's more, filter business gives you a chance to see what repair and check-up work is needed on furnace equipment.

Here's How Dust-Stop Helps—

You get free mailing pieces . . . free newspaper mats . . . free postcards . . . free radio scripts . . . free window and counter displays . . . free reminder labels to paste on prospect's furnaces . . . free card file for names and follow-up dates.

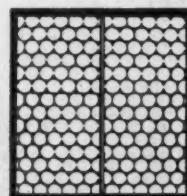
And you get national advertising in such magazines of big circulation as these: *The Saturday Evening Post*, *Life*, *Better Homes and Gardens*,

and *American Home*.

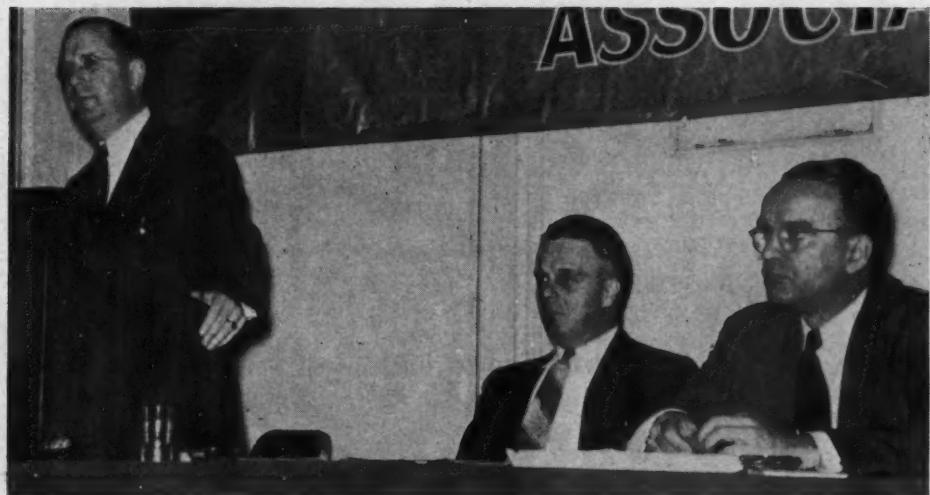
With this kind of help, many furnace dealers are getting service, repair work, and filter business on as many as 300 furnaces a year.

• • •
Get in touch with your Dust-Stop distributor today. Ask him to show you "Pulling Profits Out Of The Air," Dust-Stop's sales plan that is helping many dealers find new business.

Owens-Corning Fiberglas
Corporation, Toledo, Ohio. In
Canada, Fiberglas Canada,
Ltd., Oshawa, Ontario.



DUST-STOP*
* T.M. Reg. U.S. Pat. Of.
FIBERGLAS* AIR FILTERS



W. L. McGrath (Industry representative to Plumbing and Heating Section) tells the audience how WPB officials have given the industry a real break while President H. S. Sharp and Managing Director George Boeddener preside.

N.W.A.H.&A.C. Ass'n Summer Meeting

UNQUESTIONABLY, the underlying current of thought, interest, and worry of the warm air heating industry at this mid-point of 1942 was expressed by President Harold S. Sharp in his President's address to the Mid-Year meeting of the National Warm Air Heating and Air Conditioning Association in Chicago, when he said—"This is a period of orders, changes, rulings, doubts and worries; when no man seems to know just where he stands and we are subject to day-by-day changes in the conditions which affect our business. But we went through a quite similar situation during the first World War and what we did then is much the same as what we are expected to do now.

"This industry is just beginning to realize that it is really in a war; we must do our part; we must survive or fail according to the rules laid down by Washington. Production of equipment for war is just one part of the gigantic effort America is making; many industries have been more adversely affected than has the warm air heating industry, as a matter of fact, up-to-date, we have been declared essential, and we have been treated more leniently than have many other industries.



Publicity and Advertising Committee Chairman P. B. Zimmerman asks members to give thought to a post-war, all-industry common publicity and sales objective.

"Even though we are an essential industry, manufacturing and installing heating equipment so essential for the comfort of war workers, members of the armed forces, and American civilians in general, we, as an industry, should not overlook the possibilities lying in our doing defense work. If we know of a contract which we can not handle individually, it is our patriotic duty to consider splitting this contract among other member manufacturers forming a pool.

"I believe government intends and will help our industry if this is humanly possible. But government will not be a Santa Claus, so how well we survive depends, in the final analysis, upon the individual initiative and determination of each firm in this organization."

Post War Planning

P. B. Zimmerman, recently appointed chairman of the Publicity and Merchandising Committee of the Association, and vice president and general sales manager of Airtemp Division, Chrysler Corporation, brought, for almost the first time in recent conventions, a brief picture of what the warm air heating industry must anticipate in the way of post war business. "It is quite likely," said Mr. Zimmerman, "that this industry, like all other industries may be greatly changed after the war, and unity of purpose of the industry rather than individual and completely different objectives may be the one thing which will permit this industry to survive and advance after the war. If this industry does not have unity of objective, we can quite easily lose all our standards by which all products and our industry will be judged by the purchasing public. Without industry unity of objective, there is serious question that the public will accept our individual claims and proposals, so the sooner the individual members of this organization can get together to establish unity of standards and unity of objectives, the quicker will this industry be in a position to pursue post war advances.

"Post war planning seems likely to improve all structures and appurtenances. The 'modern kitchen' is an example how an industry can make the housewife conscious of her kitchen. Heating and the heating industry has made almost no progress toward simple, easily understood standards whereby the public can determine what they are buying and what they can



Left—David H. Butler, Chief, Plumbing and Heating Section, WPB, said materials allocated for 160,000 replacement furnaces is not too much; a "victory" furnace may be forthcoming; barracks housing is coming; PD-25A is obligatory.

Right—R. K. Thulman reported the "gutless wonder" (PBA-18 type furnace) is not showing up too well under test and a better furnace is needed.



expect to get. We, as an industry, can easily sell 'human comfort' which today is hard to find and hard to understand.

"If we, as an industry, can all subscribe to standards of design, of product, of comfort, we can logically ask utilities and other industries, also the public press, to help us tell our story to the public. This is a three to five year intensive publicity program. The contractor will be a chief factor. He must be elevated by education so that in the post war period he can become our industry's contact with the public. He must become a better merchandiser. He must be a generally higher type of business man, if possible. We, as manufacturers, must make it possible for him to tell our story to the public quickly, easily and in an understandable fashion. Up to now, warm air heating and comfort has been in the hands of our engineers—in the post war period, our program must be in the hands of the merchandiser."

McGrath on Washington

W. L. McGrath, member of the Plumbing and Heating Industry Advisory Committee to War Production Board, succinctly summarized his many month's experience in Washington, representing the industry. "It seems," said Mr. McGrath, "that warm air heating has been and will continue to be considered an essential industry in the war effort. Men in the Plumbing and Heating Division are capable individuals, carefully selected, and are conscientious and sincere in promoting the overall war picture without sacrificing our essential industry. This simple statement fails to describe properly just what the men in charge of our industry in Washington have actually accomplished for us. If we will remember how many industries like the washing machine industry or the gas stove industry have been practically put out of business or converted to war effort while the warm air furnace manufacturing industry still continues to supply its usual function, we will get some small idea of just what these men in Washington have done for us.

"So far as we can judge now, this industry should enjoy a substantial business in defense housing, in modernization, repair and maintenance work. P-84 gives this industry liberal latitude in repair and maintenance and we should consider it a patriotic duty to follow P-84 as the order was intended and not use P-84 as a loop hole through which we can do business

as usual—which was not intended. We may not be able to satisfy all requests, particularly requests for improvement in existing heating systems, but most of the industry should be busy when we remember that many shops will go out of business through employees leaving to work in war industry, through the draft, and through men enlisting in the war effort. Last of all, today's prices and quantities on iron and steel products have been lower in price and more equitably distributed than during the last war."

25 Years of Research

Research Advisory Committee Chairman F. G. Sedgwick reported that this year marks the 25th anniversary of a continuous research program by this association—a program not duplicated by any other industry, any place, any time. At the present moment the research program is practically at a standstill; it is difficult to obtain graduate students; and there seems to be more important things to do. Our research program has definitely contributed to the overall war picture by making available to the various Washington agencies all of the information we have gathered during the 25 years of research.

Our "Gutless Wonder"

Representing the technical division of FHA in Washington, R. K. Thulman, addressing the convention on the defense house heating picture, abruptly removed any sense of complacency which members might have had in their thinking of what this industry has contributed to the defense house heating problems. The furnace which this industry has developed for the purpose of heating defense housing (60,000 Btu output at the register, 600 cfm in forced air, 26 x 26 inches on the floor, coal, oil or gas-fired), Mr. Thulman referred to as a "gutless wonder."

The saving of steel used in this furnace by snipping off pieces, said Mr. Thulman, falls short of a real effort to devise a new type of furnace which seems necessary for this new type of heating. These furnaces, under test, in some instances, have shown a temperature of 1130 degrees for two hours out of a 6 1/4-hour test run; this is stack temperature. Under these tests most of the metal around the firing door was cherry red. This is not true conservation of metal. The country can not afford to burn up furnaces. If we are to continue to heat defense housing by warm air heating, this industry must do a better job of producing a good product to meet our new requirements.

Mr. Thulman described how FHA tried as long ago as four years to prove to the construction industry how greatly today's needs have changed the overall housing picture. As the war came along and has con-

Golfers, left to right—
W. Percival, Grant Wilson,
Harry Ebbert, H. MacCubbin,
A. L. Rybolt, H. S. Sharp, H. J.
Carr.



tinued, these old ideas of FHA have merely been crystallized, indicating that these 4-year old ideas were eminently sound and thoroughly considered. Since Pearl Harbor, these ideas have not changed one whiff, in fact, the things the Technical Bureau of FHA was striving for four years ago are now absolutely essential.

Mr. Thulman then described some of the difficulties of establishing a furnace rating formula, acceptable both to the warm air heating industry and to the technical division of FHA. It would seem from his remarks that there are differences of opinion as to just how this new type defense house furnace should be rated and Mr. Thulman declared that a basis of rating acceptable both to the industry and to FHA must be quickly arrived at. That there are some points on which opinion differs widely is indicated by Prof. Konzo's analysis of the furnace rating problem presented in this report of the convention.

Furnace Rating Formula

Prof. Konzo reported that last heating season tests were conducted in the Research Resident on a gas-fired furnace burning natural gas. Also that a new publication from the Engineering Experiment Station entitled "Combustion Efficiency as Related to Performance of Domestic Heating Plants" indicates the relationship between flue gas temperature, CO_2 and flue gas loss and what may be done to conserve fuel through obtaining higher efficiencies. Another publication to be released shortly is entitled "Simplified Procedures for Selecting Capacities of Duct Systems for Gravity Warm Air Heating Plants" presenting technical data supporting the "manual" and showing resistance of typical boot fittings in gravity systems, also streamlined boots and poor boots. One interesting series of data, said Prof. Konzo shows that horizontal leader pipes may be just as effective as inclined leader pipes in gravity systems.

The problem of rating oil-fired furnaces employing vaporizing type burners, has been approached from three different angles. A method for determining capacities by measuring the difference between heat input and flue-gas loss is simple, but is not accurate.

A second, more complicated method, requiring elaborate testing equipment is accurate, but not practicable. The third method, which is a modification of the tentative test code seems to have the best possibilities and it is hoped to present a definite recommendation at the winter meeting.

Prof. Konzo then reviewed the suggestion of the Engineering Experiment Station that defense house furnaces be rated at two combustion rates—a minimum rate of two-thirds of the maximum rating, or usually a 5-lb. rate and a 7½-lb. rate. This is outlined in Prof. Konzo's article in this issue.

The Research Residence staff has had considerable correspondence with the housing agencies on rating tests for coal-fired equipment. The gravity rating formula specifies a minimum ratio of heating surface to grate area of 15 to 1, which raises the question of whether or not this rating formula is applicable to the defense type furnace which has an upright combustion chamber and no radiator. FHA contends that the defense house furnace should not be rated by the standard gravity code formula. The Engineering Experiment Station test indicates that—(1) The heating surface should be adequate, and (2) the relative positions of heating surface are minor provided the tests are run at identical combustion rates.

Draft Loss Low in PBA-18's

Along this line, Prof. Konzo pointed out that the anthracite industry has run tests on the defense house furnace and these tests indicate that (1) the draft loss through this type of furnace is exceedingly small if not negligible, (2) that with any sort of chimney draft, a combustion rate in excess of desirable limits can be obtained, and (3) combustion rate can be limited to a desirable ceiling by the use of a draft limiting device.

A standard test code for coal-fired furnaces is not easy of solution and involves a long scale program in the opinion of the engineering experiment station, because there are these difficulties—(1) a test code requires development, (2) coal tests require competent, trained engineers and considerable time for each furnace, (3) at present no central laboratory is

The "roundtable" on war product prime and sub-contracts was outlined by Tom Byrd (Armco), left. At right, forum speakers Byrd, R. J. Richey (Carnegie-Illinois) and T. G. Johnston (Republic Steel) consider a question from George Boedener (back to camera). The decision was sub-contracts are possible; but hard to get; require a real sales effort.



available and (4) no standard fuel has been selected for use in these tests. So the present situation remains that a standard test is desirable, that much preliminary work must be done before any such standard tests can be turned over to the industry.

WPB's View of the Situation

Probably the most interesting address and discussion at the convention centered around David H. Butler, Chief of the Heating Section of the Plumbing & Heating Branch, War Production Board, who said that right at present the picture, so far as the furnace industry is concerned, does not look very bright. Mr. Butler explained that War Production Board wrote Order L-22 to hold up production in the industry until a complete analysis of the situation could be made. The attitude of Plumbing and Heating Branch is that surely at least one-half of the furnaces sold each year as replacements were necessary replacements and therefore, the general one-half-usual-production for replacement allocated to the industry is some fair measure of actual needs.

Mr. Butler also described the pressure brought by other agencies to reduce the 160,000 replacement furnaces scheduled for 1942. So far as army requirements are concerned, it does not appear now that more than 4,000 furnaces will be required in the last six months of 1942 to meet army requirements. Army proposes to use stoves.

Defense housing has undergone several radical alterations in recent months. The recent transfusion given to defense housing indicates there will be continued defense housing construction, but does not make clear just what type of housing this will be. At the present moment, the barracks type of housing is much favored in certain important Washington agencies, and Mr. Butler promised that much more would be heard of this type of housing as the weeks go by. The difficulty seems to be that most war workers do not like this barracks type of housing and it is going to require considerable effort to sell war workers on barracks housing.

Hope to Keep All Mfrs. in Furnace Business

Mr. Butler assured the industry that the Plumbing and Heating Branch is trying to avoid concentration of furnace manufacture in the hands of a few manufacturers as happened to the stove industry because Plumbing & Heating Branch prefers to keep the manufacturers of the furnace industry alive through the use of revised PD-25-A. Mr. Butler warned, however, that almost anything can happen in the present situation and every manufacturer should use every possible effort to obtain prime or subcontract war work.

There is also much argument pro and con throughout Washington on the subject of a Victory Model furnace, which means a furnace identical no matter who manufactures it. Plumbing and Heating Branch hopes that the industry will produce a furnace which uses a minimum amount of critical material but is still universal enough in general design to let any manufacturer make the furnace.

Questions and Answers

In the open discussion which followed Mr. Butler's short talk, Mr. Butler explained that PD-25-A as revised will, it is hoped, expedite the obtaining of necessary material. Plumbing and Heating Branch is really trying to give a rating which will obtain material, but the priority system is in such a condition at present that this has not been always possible.

PD-25-A, it is hoped, will also permit the accumulation of seasonal stock, but what the actual outcome will be must await the third or fourth quarter of the year.

Among some of the answers to questions were:

- 1—To obtain seasonable repair stocks, the dealer can furnish a PD-1-X to his manufacturer to permit the manufacturer to obtain material to ship furnaces.
- 2—It is possible for the furnace manufacturer to sell himself out of business unless he gets priorities as high as possible. For example, a manufacturer who accepts A-10 ratings when he requires A-1-j ratings to replace material used in the manufacture of a furnace is selling himself out of business.
- 3—The metal branch of Plumbing and Heating Bureau is now accepting the Bureau's recommendation for allocation of cast iron to be used in the manufacture of cast iron furnaces.
- 4—Contractors having blowers in stock may sell these blowers if they are willing to deplete their stock without hope of replacement, even though the sale of the blower definitely improves the job.
- 5—P-84 seems at present to be the salvation of the furnace dealer. If he conducts a suitable repair and replacement program, he can probably obtain sufficient work to keep himself in business. Under the amendment to existing orders, as for example, L-79 as amended, it is now possible for the dealer to sell many types of equipment which were formerly frozen, if the manufacturer is willing to release his products without hope of replacement.

Prime and Sub-Contracting

Another interesting discussion centered around the problem of obtaining war prime and subcontracts. T. I. Byrd of American Rolling Mill Co. conducted the forum consisting of Mr. Byrd, R. J. Ritchey of Carnegie-Illinois Steel Corporation and T. G. Johnston of Republic Steel Corporation.

Mr. Byrd reported that at present the production of war products is getting well organized and unless something unforeseen happens the number of items to be manufactured by firms not now engaged in war work will become fewer and new contracts will become harder to get. Mr. Byrd explained that Washington announces that negotiated contracts have been advanced to replace bidding but this negotiated contract basis tends to conceal the subcontractors and prime contractors and makes it increasingly difficult for the man seeking war work to find manufacturers wishing war work done.

About all the helpful contractor can do is to file his facilities record with the local War Production Board; he must be willing to buy more equipment; but subcontracts are not easy to obtain in many parts of the country. The army ordnance and the army quartermaster corps are large buyers of items manufactured of sheet metal, but orders to purchase are not released at stated intervals and it is necessary for the contractor to keep in constant touch with these offices in order to obtain permission to bid. The same situation applies to the Chemical Warfare and Signal Corps, and to the Navy. Mr. Ritchey and Mr. Johnston briefly outlined some of the interesting developments such as the all-steel airplane to replace the aluminum plane, using steel sheets of thin-gauge weight, a mate-

(Continued on page 76)

Association ACTIVITIES

Contractors' Alliance

The June monthly meeting of the Air Conditioning Contractors' Alliance of Chicago, the last meeting for the summer, was held the day following the June meeting of the National Warm Air Heating and Air Conditioning Association. President J. Boslough and Director J. Harvey Manny, prevailed upon President Harold S. Sharp and Managing Director George Boeddener to address the Alliance meeting.

At the meeting held in the Orrington Hotel, in Evanston, Illinois, President Sharp briefly described some of his experiences in Washington and told the members that there seems to be two fields for heating dealers during the rest of the year. These are: new houses for war workers and the old house repair and maintenance field. Since the Chicago Alliance members do new house work with union employees, the new house field constitutes an important activity for them. Mr. Sharp explained that there is considerable favoritism being shown in Washington at present for the barracks type of war worker house, but he said he believes there will be a considerable number of single family, individual war worker houses, privately financed, constructed around the country if the critical material situation does not get any worse.

Under P-84, repair and replacement seem to offer the best opportunity for the average contractor and President Sharp described Washington's present leniency in permitting the use of products already manufactured until the supply is exhausted. He urged contractors to plan and put into operation programs designed to emphasize repair and maintenance to all of their customers and prospects.

Managing Director George Boeddener outlined the history of the association's activity in Washington (these have been described by Mr. Boeddener in American Artisan from time to time during the last two years) and briefly outlined the situation as it has been during the past six months and will be for the balance of 1942. Mr. Boeddener briefly reviewed the various rules and regulations which now affect warm air heating contractors and manufacturers and described the revision of PD-25-a which is expected to affect everyone in the industry. The overall situation, said Mr. Boeddener, is not too bad and is not too good. What will happen to the individual contractor seems to depend mostly on what the individual contractor has the energy to do for himself.

The third speaker at the dinner was J. Kaberlein, director of apprentice training at the Washburne school in Chicago and author of the book "Air Conditioning Metal Layout." Mr. Kaberlein described the general set-up for

training apprentices under the joint contractor and union agreement and the type of students which the school is now turning out as an apprentice.

Pennsylvania

The Sheet Metal and Roofing Contractors' Association of Pennsylvania will hold their annual convention on July 16 and 17, 1942, at Erie, Pennsylvania. Headquarters: Lawrence Hotel. A welcome is extended to any individual or firm engaged in the operation of a sheet metal or roofing business.

If you have trouble with priorities, procuring materials, substitutes, scarcity of good labor or overhead expense burden, be sure to attend and you are invited to bring two or three questions to be dropped in the Question Box.

The Buyer's Guide and Program are already in the mail. There will be a Board of Directors' meeting at 8:30 p. m. on Wednesday evening, July 15.

L. C. Trost, General Chairman, will call the meeting to order at 1:30 p. m. on Thursday afternoon.

Hon. Charles E. Barber, mayor for City of Erie, will give the address of welcome, with a response by J. E. Sprucebank, president of the association.

C. S. Lefferdink, Analyst for the Erie Area, War Production Board will address the meeting.

Louis Luckhardt, Chairman Legislative Committee, E. S. Riesmeyer, Chairman Vocational Training Committee, and Frank Schimpf, Chairman Trade Relation and Policy Committee, will each report.

Adam Tritsch of Thompson and Company, Pittsburgh, will address the convention, on "Our Auxiliary."

Charles H. Fitzwilson, Development Engineer, Carnegie Illinois Steel Corporation will present the motion picture "Steel for Victory," or "Bridging San Francisco Bay."

On Thursday evening, there will be a Stag Get-Together.

J. D. Wilder, Editor American Artisan, will address the meeting on Friday morning on the "General Situation Confronting the Warm Air Heating and Sheet Metal Industry."

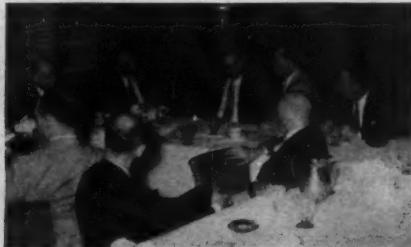
A representative of War Production Board, Business Contract Section, will discuss "Conservation Order M-126."

In the afternoon, following committee reports and election of officers, Dr. Rueben E. Slesinger and Herbert S. Parnes, Professors of Economics, University of Pittsburgh, will address the meeting on the subject "Inflation in the Present Economic System."

J. E. Davis, Chairman, will talk on "Overhead Expense."

The banquet will be held Friday evening at 7 p. m.

M. F. Liebermann, Secretary.



Three views taken at the June meeting of the Air Conditioning Contractors' Alliance in Chicago, showing officers, members and their guests (Harold S. Sharp and George Boeddener)

Association Activities . . .

Detroit

The Detroit Association of Warm Air Heating and Air Conditioning Contractors, Inc., in the June bulletin calls attention to the importance of association strength to retard, delay or stop harmful pending actions.

The second Thursday in each month is association meeting night, at the Fort Shelby Hotel, time 8:30 p. m.

A few of the orders which quite closely affect members are:

M-126	Iron & Steel
M-67	Inventory limitation
M-9-c	Copper
M-9-a	Copper
M-15-c	Rubber
L-121	Lumber
L-63	Suppliers inventory
L-41	Construction
L-79	Plumbing & Heating
L-31	Gas
L-56	Fuel Oil
L-74	Oil Burners
L-75	Stokers
P-19	Project Rating
P-55	Residential
P-84	Repairs
P-100	Repairs
PD-1-a	Equipment
PD-3-a	Equipment—Military, etc.
PD-1-x	Warehouse Stock
PD-25-a	Production Requirements—Large
PD-25-x	Production Requirements—Small
PD-25-x	Discontinued after May 15th

Two of these orders, if not modified or if higher ratings are not given, on residential construction, will stop such work entirely in a short time. One is Order L-121, the so-called lumber freeze which stops the delivery of all soft woods by the mills. The other is the Amendment to M-9-a which became effective May 7th requiring a rating of A-1-k or higher for the release of copper wire or other copper or copper based alloys, while the top rating on this type of construction is A-2. This and other matters of importance such as the new agreement which the Union is about to ask for is under discussion.

Order No. L-79 effective May 23rd, is of utmost importance to you.

(3) Any person may sell or deliver any of the following listed equipment (without a rated order).

- (i) Oil burning furnaces, accessories or parts for replacement to reduce oil consumption
- (ii) Equipment specifically designed for hospitals, surgery, dental, veterinarian, barber shop or beauty parlor equipment
- (iii) Any equipment sold prior to April 17th and delivered before June 30th, 1942.

(4) To July 31, may sell or deliver upon following customer statement:

"The following equipment is required for the completion of the erection, construction, remodeling or rehabilitation of a building, structure or project, or additions, extensions or alterations thereof, which has been initiated (by physically incorporating therein material which is an integral part thereof) after July 31st, 1941, but prior to April 10th, 1942.

Dated..... Signature.....

We believe this is the important part of this order. The rest can be discussed at meetings.

One thing more, you may sell and install all the stokers or coal firing equipment you desire. Particularly is the Government desirous of replacing gas and oil-fired furnaces with coal burners.

Marshall Van Assche, Secy.

Illinois

At a special meeting of the officers and directors of the Sheet Metal Contractors Association of Illinois (promoting education, better trade conditions, and more pleasant relations) held June 20th in Joliet, it was moved by President J. E. Peterson and seconded by Vice President C. H. Lauerman that a Bulletin should be issued from time to time to our contractor-members to keep them posted on association activities.

The Joliet meeting was attended by the president and vice president, Secretary W. W. Johns, and directors A. F. Reese, J. J. Walter and E. M. Pluth. J. D. Wilder, editor of American Artisan, was a special guest.

At the April annual convention, J. D. Wilder was appointed chairman of the committee to investigate the possibility of securing sheet metal contracts from the War Department for members. He made a very interesting report at our Joliet meeting of his activities in this endeavor, reading numerous replies he had received in response to his letters soliciting work for Illinois sheet metal contractors. All of these replies carried practically the same message—that their needs were being taken care of at the present time, but suggested that we try for sub-contracts in our own area.

Attached to Bulletin No. 1, dated June 27, is a survey form which the War Department provides to be filled out by members. There are to be mailed to J. D. Wilder, Editor of American Artisan, 6 North Michigan Avenue, Chicago, who will take them to the War Department in Chicago.

ITEMS TO BID ON

Earlier this year Wilder, Peterson and Johns visited the War Department display in the Civic Opera Building in Chicago and found the following items which our members could make in their own shops:

Grate, wood-burning—Spec. No. 28-113
Case—water heater—Spec. No. 28-114
Shield—water heater case
Pans—Bake
Arresters—M 1941
Tool Box for Range—M 1937
Arrester, spark
Stove tent Sibley
Chest—Lantern—92-25
Patterns—shoe service
Lantern—Candle, folding
Shields, Stove, tent—M 1941
Hoods, stove pipe—M 1941
Guards, tent

Further information on these items can be obtained from Joe Wilder.

L-79 AMENDED

Ed. Pluth and Joe Walter are to contact War Production Board regarding interpretation of Amendment to L-79. Their findings will be reported in question-and-answer form in the next Bulletin.

1943 CONVENTION

It was voted that our 1943 Convention would be held in Peoria in April—the exact dates to be announced later.

STARVED ROCK MEETING

It was voted to hold an Officers and Directors meeting sometime during the summer at Starved Rock, with an invitation to all of the membership to attend. At this meeting wives and families are invited.

Wm. W. Johns, Secretary.

Philadelphia

The June issue of Trade Association News, published by Roofing Metal & Heating Engineers, Inc., Philadelphia, warns against talking war with your prospects, for rumor usually has no truth in fact. Disagreeable conversation has no place in business hours as it fills the mind and prevents clear thinking about our daily task to do business profitably.

A rising vote of thanks was given to Messrs. Harrison and Hunsicker of the Philadelphia office of War Production Board. The representatives of WPB stated their office—War Production Board, Broad Street Station Building, 1617 Pennsylvania Blvd., Philadelphia—is ready to answer any particular problem, if there is an answer. If not, they will phone or write Washington, D. C., and obtain the answer.

The government's formula for figuring heat loss for wartime new small houses is explained in answer to a question from a member.

As more and more firms are being added to the membership roll, the association influence for good and better business is becoming stronger and stronger. The association can help you and you can help the association.

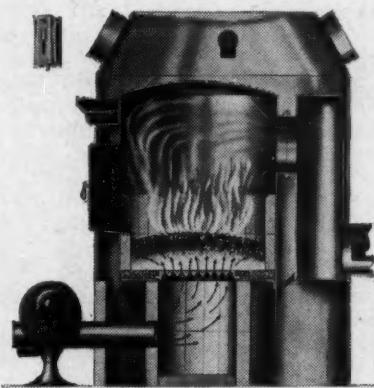
Meetings on the fourth Monday of each month at the Lorraine Hotel, Broad and Ridge.

B. F. John, Secretary.

New PRODUCTS

△ 71—Stoket

Stoket Manufacturing Company, 964 Berry Avenue, St. Paul, Minnesota, offers Stoket for converting present oil-burning furnaces to burn less expensive sizes of coal and coke. The oil burner is left in position, using the motor and blower for forced air to burn the coal. Pres-



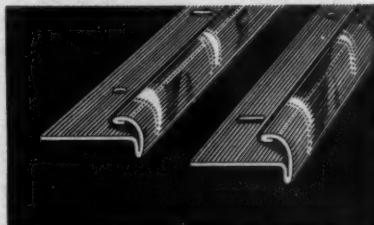
ent controls consisting of thermostat, relay, and limit control will control the burning of coal the same as oil. Equipment needed for converting to coal is Stoket grate, steel ring to support grate, high temperature hearth cement, set of clinker tongs, installation and instruction card.

Stoket is made in three sizes: Round for 18-24 in. diameter heating plants; Obround for 27-40 in.; and rectangular for narrow hot water plants.

△ 72—Rolled Metal Trim

The B and T Floor Company of Columbus, Ohio, is introducing a new style rolled metal non-drip edging—Chromedge—a linoleum insert trim or wall panel trim.

When linoleum is used as a working surface covering, this material is



used as a non-drip sink edging and is furnished in two sizes: R-171 for light weight wall and standard gauge materials, and No. R-171-A for $\frac{1}{8}$ in. coverings. The section provides a small and neatly rounded bead along the outer edge of the sink top or counters. Available in 12 ft. lengths.

For your convenience a number has been assigned each item. Circle the items in which you are interested on the coupon on page 70 and mail to us.

● Indicates product not listed in 1941 Directory.

△ Indicates manufacturer not listed in 1941 Directory.



△ 73—Plastipitch

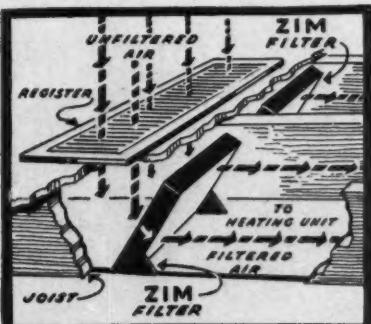
Coated Products Corporation, P. O. Box L, Verona, Pa., is introducing an improved method of weatherproofing prefabricated metals and shapes. Plastipitch weatherproofs and protects metals against corrosion.

Plastipitch may be appropriately modified before application to the metal to produce a coating that will not become brittle or chip off at low temperature, or melt and flow at high atmospheric temperatures. It is available in various types of finishes and in a variety of colors, fineness and quality of mineral surfaces.

△ 74—Zim Gravity Filter

Zim Filter Company, 5231 Hohman Ave., Hammond, Indiana, has announced a new Zim filter designed for gravity warm air systems. Curved strips of fabric made of spun glass pick up and retain the foreign matter.

The efficiency of the Zim is attained through the proper spacing of the



glass fabric strips and the curve to which these strips are held by the four inner strip supports. This curve, is a mathematical or sine curve rather than a simple arc of a given and uniform radius.

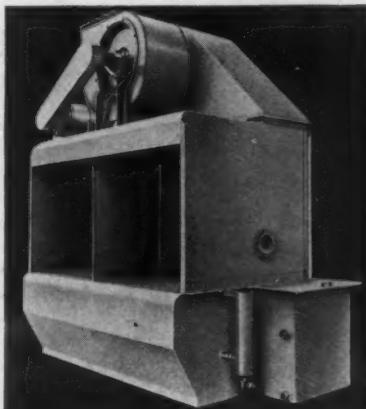
The frame of the Zim is made of heavy chip board and supplies ample rigidity as well as sufficient strength to permit careful cleaning. Filter replacement is suggested at the beginning of each heating season.

75—Hydro-Whirl Booth

Industrial Sheet Metal Works, 628 E. Forest Ave., Detroit, has developed the Hydro-Whirl Magnesium booth. Hydro-Whirl is an entirely new principle in wet dust collecting, and is effective on all types of metal dust including aluminum, iron, steel, and others, as well as magnesium.

The factor of safety has been stepped up beyond its former efficiency, and the design has been improved and patented.

The bench-high grating of the compartment where the work is done is made of hardwood, which will not produce sparks if struck with a grinding wheel or tool.



As an added protection against spark ignition, the booth sections are lined with Masonite.

An automatic control maintains the water level at a uniform height in the tank below the grating. Thus the tank will never run dry to endanger the safety of the operator.

The insidious dust is effectively trapped by the Hydro-Whirl, the functional part of this new dust collector, and is brought down into a tank where it is transformed into a harmless, inactive element and later either burned or buried in the ground.

The working mechanism consists of a rotating shaft on which is centered a series of discs. The controlled rotating speed of the shaft in a horizontal plane throws a rain of water into the baffled section of the unit at which point the dust is whirled out of the air stream. Scientific calculations have attained a proper balance between the velocities of air and water.

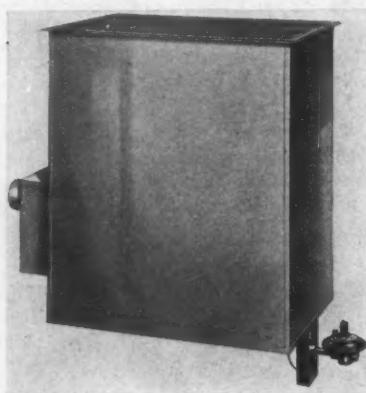
New Products

For your convenience in obtaining copies of new Literature use the coupon on page 70.

76—Floor Furnaces

American Radiator & Standard Sanitary Corporation, Box 1226, Pittsburgh, offers the following units to meet government specifications for war housing:

The Saginaw gas floor furnace (illustrated) provides carefree warm air heating at minimum operating and installation cost. It consists of an outer and inner casing, the latter enclosing the combustion elements and radiator, and forming the chamber from which warm air enters the



rooms through the register. The area between the two casings is the return air space. The heat is regulated manually, or, by the addition of necessary controls, can be entirely automatic. Available in four sizes—with AGA Btu. outputs per hour of 14,000, 24,500, 35,000 and 49,000.

The Elmwood oil floor furnace operates on the same general principles as the Saginaw gas floor furnace. Its features include dual combustion chambers, two 8 in. quality pot type burners, flow and limit oil valve control and draft box with built-in draft regulator. The oil valve control, an exclusive feature, prevents temperature of heated air from rising above a safe degree. Approved by Underwriters' Laboratories. Made in one size with 50,000 Btu. output per hour.

77—Micromet

Calgon, Inc., 323 Fourth Ave., Pittsburgh, is introducing Micromet, designed to prevent scale and control corrosion in air conditioning units, mechanical washing equipment and household water systems.

Micromet is a glassy sodium phosphate, made of food-grade material to a closely controlled composition, and carefully crushed and sized. In air conditioning units, Micromet may be fed by means of a shallow screen basket, placed in the sump of the unit, or by a simple pot-type feeder of standard galvanized or black iron pipe, placed in the feed water line.

Micromet will be distributed in units of 1, 1½, and 5 pounds. A 12-page booklet gives information.

78—Multiple Star Welding

Electric Arc, Inc., 152 Jelliff Ave., Newark, N. J., announces the Multiple Star System of welding—the air compressor multiple idea applied to quantity arc welding.

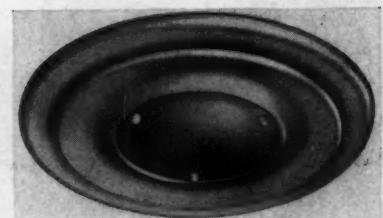
A transformer with capacity to furnish greatest demand for welding power is located outside the plant. A system of leads circles the shop wall with outlets available at strategic points. Simple controls enable the operator to regulate voltage and current to fit the exact needs of the job.

Advantages are increased speed and economy of power with better welds.

79—Fluemaster

Round Oak Company, Dowagiac, Michigan, has developed a coal-fired unit which employs a chimney heating principle, for low-cost houses.

The Fluemaster is entirely concealed inside the chimney, with fire pot on either first floor or basement level. No room space is required. A heavy metal, porcelain enameled heat exchanger flue through which the hot combustion gases travel, extends up above the attic floor (inside the brick chimney) where a quiet, electrically operated fan and automatic blower control is located. This fan forces the radiated heat downward, in a counter flow, through baseboard, wall



80—Recessed Venturi-Flo

Barber-Colman Company, River & Loomis Sts., Rockford, Illinois, offers a recessed model air diffuser, in a wide range of sizes and special styles, permitting handling air volumes up to 15,000 cfm per unit.

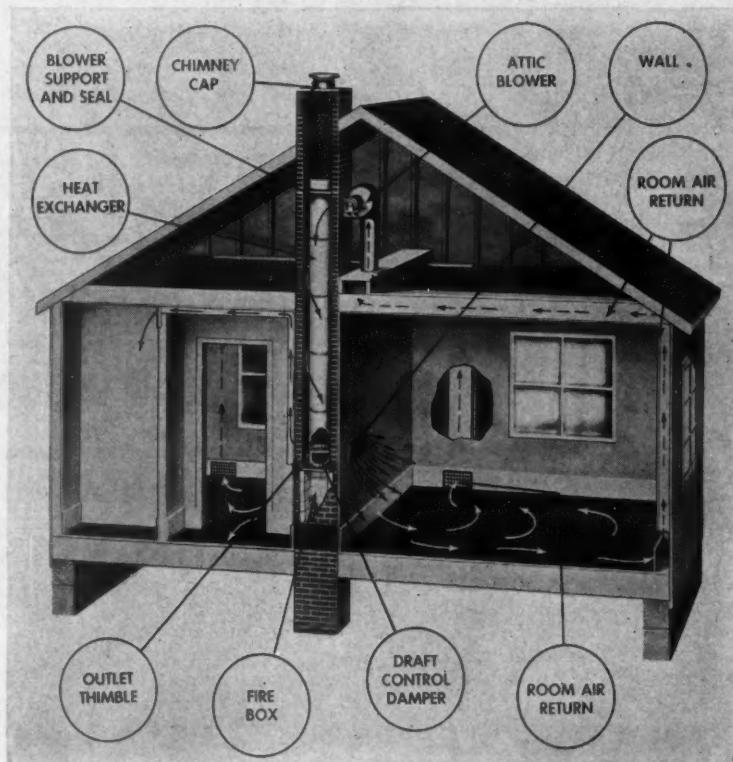
Features are: Spun steel overhead type air diffuser with flow characteristics similar to those of Venturi meter. Relationship between neck area of unit proper and Venturi throat so proportioned as to create slight back pressure in neck at all times, automatically insuring uniform distribution around periphery.

Bulletin F-1497-2 is available.

or ceiling grilles, and circulates it in the various rooms. Return air is drawn through wall baseboard grilles, through studding spaces and attic floor joists, back into the blower—and again down through the chimney heating space.

Only a few feet of warm air ducts are required, and necessary return air duct work is entirely of non-critical material. An attachment for domestic hot water is available.

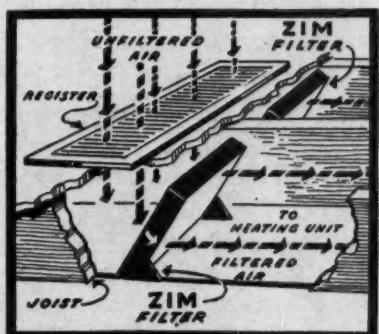
The complete shipping weight (including fire brick liners for the fire pot) is 400 pounds. When fuel limitations are lifted, the Fluemaster may be converted into an oil or gas burner, if desired.



designed for and REALLY WORKS IN GRAVITY SYSTEMS not only filters the air, but ACTUALLY SPEEDS AIR TRAVEL



ZIM Filters are not just a new "brand" of filter—they're a whole new idea—an altogether new type of filter—designed to do a new kind of filtering job—to work in gravity systems only—and, instead of impeding air flow, to actually increase its velocity.



ZIM FILTER CO., 5231 HOHMAN AVE., HAMMOND, IND.

The **ZIM**
FILTER *for*
GRAVITY SYSTEMS

purities from the air passing over their surfaces.

Laboratory as well as actual service tests have proven Zim's efficiency, and we'll sell them to you on the basis of "satisfaction or your money back". A million dollar market is waiting for Zim Retailers, and your first step is to accept a sample Zim with our compliments for your own inspection. Send the coupon now!

Mail this COUPON Today!

Zim Filter Co.,
5231 Hohman Ave.,
Hammond, Ind.

Gentlemen: Please send sample Zim to:

Name

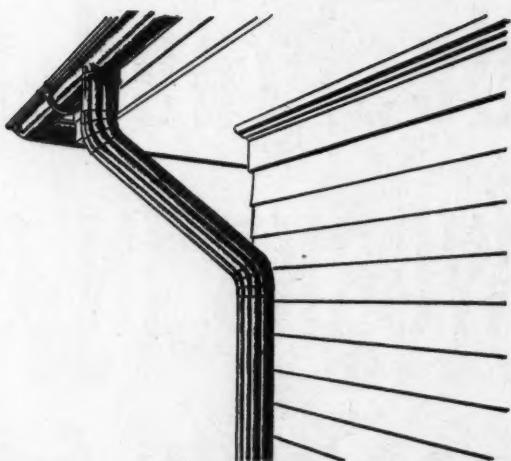
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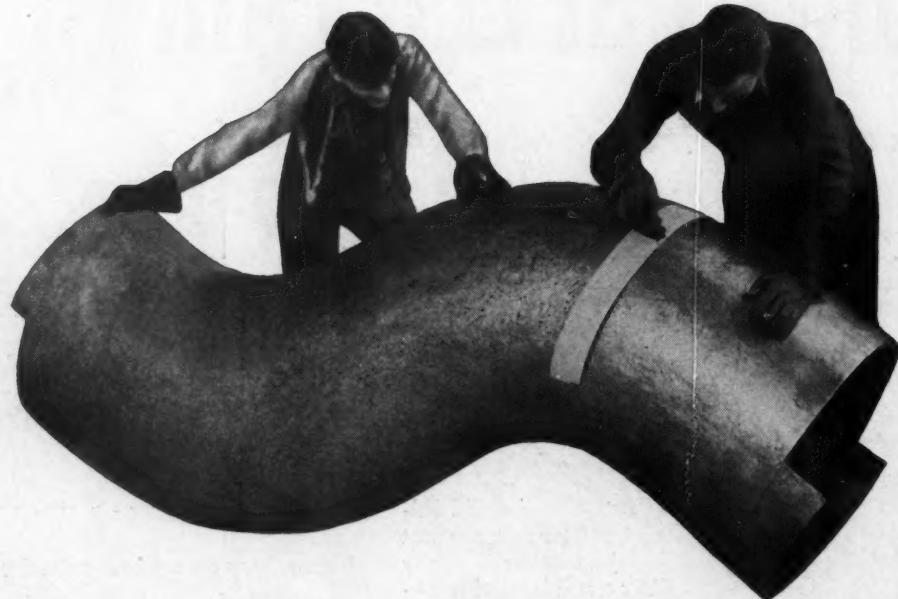
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A-7

THE COPPER THAT MIGHT
HAVE BEEN USED FOR
THIS SHEET METAL WORK



Instead— Makes huge COPPER TUBES
for vital new ships



OUR COUNTRY's war needs require all the copper that would otherwise go into regular peacetime uses . . . such as sheet metal work on residences and commercial buildings.

Typical of the applications for which copper is vitally needed is this large copper duct fabricated from sheet for use on a new cargo ship. Copper equipment of

many kinds is needed in shipbuilding, as well as in our essential chemical industries.

The time-honored properties of copper with which the sheet metal trade has so long been familiar—rust-immunity, corrosion-resistance, heat conductivity . . . and easy fabrication . . . these are some of the reasons why copper finds such great demand in our war program.



Anaconda Copper

THE AMERICAN BRASS COMPANY • General Offices: Waterbury, Connecticut
Subsidiary of Anaconda Copper Mining Company • In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ontario

New Literature

For your convenience in obtaining copies of new Literature use the coupon on page 70.

271—Steel Warm Air Furnaces

Front Rank Furnace Company, Division of Liberty Foundry Company, 2500 Ohio Avenue, St. Louis, has just issued a 4-page circular covering their line of steel warm air furnaces, both gravity and forced air. Specifications are given.

272—New Stoker Timer Bulletin

Penn Electric Switch Co., Goshen, Indiana, manufacturers of automatic switches and controls, has just issued a new descriptive bulletin on its revised line of Stoker "Hold-Fire" Timers. This 6-page bulletin covers the following:

Type 570—rated to and including $\frac{1}{2}$ H.P., A.C., 110 or 220 V.;
Type 570F—rated to and including $\frac{1}{2}$ H.P., A.C., 110 V. only, with built-in single pole entrance switch and single fuse socket;
Type 560A—rated to and including 1 H.P., A.C., 110 or 220 V.;
Type 560AF1—rated to and including 1 H.P., A.C., 110 V. only, with built-in single pole entrance switch and single fuse socket;
Type 561SW—rated to and including 1 H.P., A.C., 110 or 220 V. for summer-winter control of forced warm air systems.

The bulletin incorporates large illustrations showing both exterior and interior views of the controls, dimensional drawings, complete specifications and typical wiring diagrams.

273—America's Trucks—Keep 'Em Rolling

Vehicle Maintenance Section, Division of Motor Transport, Office of Defense Transportation, Washington, D. C., has prepared a 16-page and cover booklet to guide every

truck owner, operator, and mechanic in the proper maintenance of America's trucks. America needs every extra mile of service that can be had from its existing supply of motor trucks and tires.

Realizing that motor trucks are vital to our national transportation welfare, that the existing supply is all but irreplaceable, and that every extra mile each truck can be made to serve in safety is a direct help to the war effort, this booklet has been prepared in the interest of conserving the nation's existing supply of motor trucks and tires.

A breakdown of the transportation system of any country at war may easily cost that country the war. Ours must not break down.

Truck owners may obtain copies by writing Joseph B. Eastman, Director of Defense Transportation, Washington, D. C.

274—Weld Inspection Chart

The Lincoln Electric Company, 12818 Coit Road, Cleveland, has published an arc welding inspection chart—prepared to provide welding inspectors a simple and helpful aid in inspecting welds. The chart presents very graphically the different types of welds obtained when work is done normally with normal current, voltage and speed, as compared with those obtained when these factors are not normal (See page 68, March, 1942, American Artisan for illustrations).

Upon inspection after welding, certain tell-tale signs will reveal considerable information to a qualified inspector. Items to consider include the size and shape of bead, appearance of the bead, undercut, overlap, location of craters (indicating where the operator started and stopped welding). These conditions are illustrated by enlarged and detailed photographs on the chart. Tables accompany photographs indicating the burn-off of the electrode, the penetration of fusion, the appearance of the bead and the sound of the arc with each value of current, voltage and speed of welding.

The chart is free to inspectors of welders.

SERIES No. 3 NIAGARA POWER SQUARING SHEARS

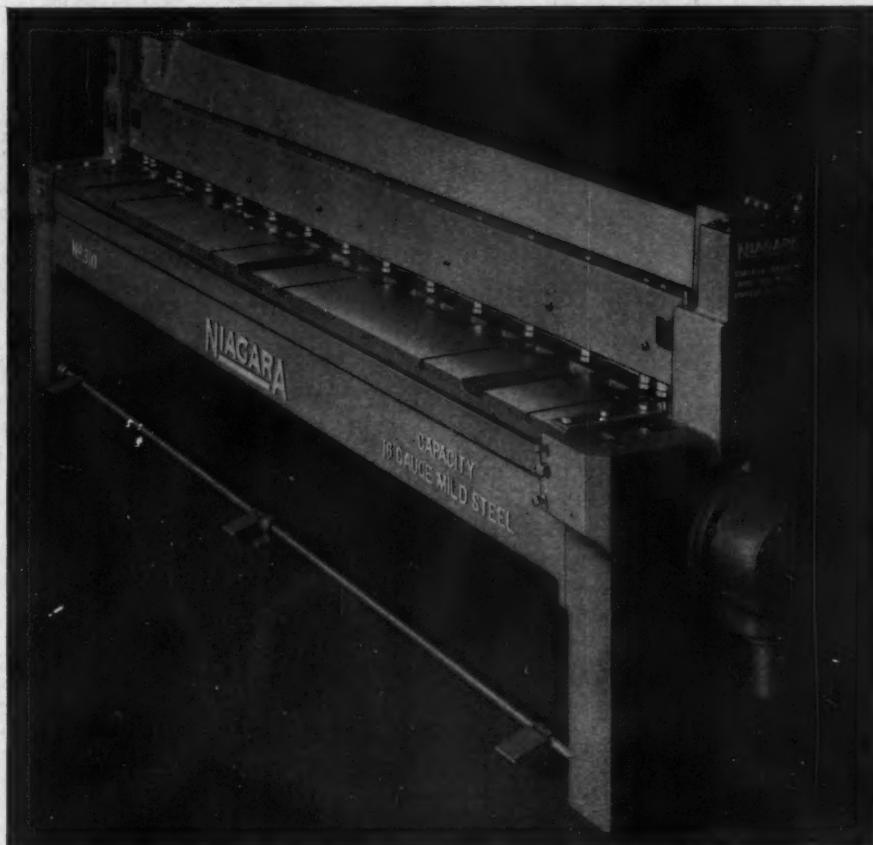
Series No. 3 Niagara Shears operate at 80 strokes per minute. High production squaring and trimming are assured by the instant-acting sleeve clutch, quick, accurate gaging and convenient operation.

They cut sheared edges and narrow strips straight to within a very few thousandths of an inch.

Motor is direct connected and drive is enclosed in oil tight case.

Standard equipment includes ball-bearing, self-measuring parallel back gage, front and side gages, and four edge, solid tool steel knives.

Niagara Machine & Tool Works, Buffalo, N. Y., Cleveland, Detroit, New York.



Capacities: 14 to 18 Gage. Cutting Lengths: 4 to 12 Feet



New Target for Industry: More Dollars Per Man Per Month in the **PAY-ROLL WAR SAVINGS PLAN**



TO WIN THIS WAR, more and more billions are needed and needed fast—AT LEAST A BILLION DOLLARS A MONTH IN WAR BOND SALES ALONE!

This means a *minimum* of 10 percent of the gross pay roll invested in War Bonds in every plant, office, firm, and factory in the land.

Best and quickest way to raise this money—and at the same time to “brake” inflation—is by stepping up the Pay-Roll War Savings Plan, having every company offer every worker the chance to buy MORE BONDS.

Truly, in this War of Survival, VICTORY BEGINS AT THE PAY WINDOW.

If your firm has already installed the

EVERYBODY

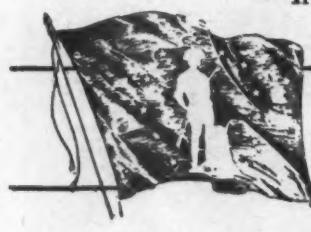
10%

EVERY PAYDAY

Pay-Roll War Savings Plan, *now is the time*—

1. To secure wider employee participation.
2. To encourage employees to increase the amount of their allotments for Bonds, to an average of at least 10 percent of earnings—because “token” payments will not win this war any more than “token” resistance will keep the enemy from our shores, our homes.

If your firm has not already installed the Pay-Roll War Savings Plan, *now is the time to do so*. For full details, plus samples of result-getting literature and promotional helps, write, wire, or phone: War Savings Staff, Section E, Treasury Department, 709 Twelfth Street NW, Washington, D. C.



U. S. War Savings Bonds

This space is a contribution to America's all-out war program by

AMERICAN ARTISAN

New Literature

For your convenience in obtaining copies of new Literature use the coupon on page 70.

275—U. S. Specification Finishes

Maas and Waldstein Company, 438 Riverside Avenue, Newark, N. J., has published a booklet on U. S. Government specification finishes to provide makers of armament products with essential information on M&W finishes that have been made to conform with various U. S. Government specifications.

276—Fabrication of Stainless Steels

Republic Steel Corporation, Republic Building, Cleveland, is distributing a 40-page booklet entitled "The Fabrication of Republic Enduro Stainless Steels," including authentic information on proper procedure for shearing, blanking, drawing, spinning, rolling of moulding sections, press and brake forming, machining, forging, soldering, silver brazing, annealing and pickling, riveting, grinding, buffing and etching. The booklet is fully illustrated.

277—Insulation and Acoustical Materials

A. G. Brauer Supply Co., 2100 Washington Ave., St. Louis, is distributing a 16-page catalog covering insulation and acoustical materials—Fiberglas insulating block, molded pipe and blanket type pipe insulation, insulating cement, finishing cements and O-C mastic, permanent form insulation, metal mesh blankets, insulating wool, asbestos insulating materials, hair felt, duct insulation, Fiberglas board, hot water jacket AE board, Red Top insulating wool products, and Dust-Stop air filters.

278—Universal Safety Roof Flange

Ben Callahan, 25 Kent St., Akron, Ohio, is distributing a leaflet describing his Universal Roof Flange—a finished product designed to standardize and cover all requirements of a roof flange. Its adaptability eliminates the necessity of custom built flanges for uncertain roof pitches. The inclined type fits all roofs from flat to half pitch, and the gable type is used for the roof comb. Suitable for smoke stacks, gas fume, and vent pipes, and made of 24, 26 and 28-gauge galvanized iron. It consists of an adjustable roof flange, cap and adjustable slide, cone top, insulation tube and inside joint of pipe for stove connection. Prices are included.

279—Lessons in Practical Arc Welding

Hobart Brothers Company, Hobart Square, Troy, Ohio, has just published "Lessons in Practical Arc Welding" with 190 pages. The text covers preliminary instructions; starting and manipulating the arc; welding common joints; welding light gauge sheets; welding in flat-horizontal-vertical and overhead position; special practice and tests; ready reference index, etc. The book is written in easy-to-understand words, giving all the fundamentals of arc welding, with descriptive pictures, charts and diagrams. Price 25c a copy. Copyright 1942.

280—Sheet-Metal Pattern Drafting

McGraw-Hill Book Company, Inc., New York City, has just published "Sheet-Metal Pattern Drafting" by Frank J. O'Rourke, instructor in sheet-metal pattern drafting, University Extension Div., Massachusetts Department of Education; State Teachers College, Fitchburg, Mass., and Vocational School, Quincy, Mass. Price \$2.00.

Chapters cover elbows, T-Pipe Joints, cornices, radial-line developments, classification of intersections, intersections of frustrums of cones with cylinders, development of scaline cones, triangulation methods, methods of design, horizontal Y branches, clustered Y branches, parallel-line methods, designing transitional elbows, airplane sheet-metal drafting, skylights, and definition and construction methods. The book is completely indexed.



Heating and Power Boilers

SERIES "V" BURNER

Pre-Mix, Venturi Type, absolutely noiseless, especially good for boiler installations in churches, schools and apartments.

SERIES "R" BURNER

Bi-Air Refractory Type, recommended for installation in boilers having very low draft and small combustion space.

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Register Type, combination oil or gas. Specially good where conservation of fuel is necessary, because it burns either or both gas and oil with the same heat pattern.

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New York, N. Y., 342 Madison Ave.

Atlanta, Ga., 299 Techwood, N. W.

New Literature

For your convenience in obtaining copies of new Literature use the coupon on this page.

281—Heating Low-Cost Houses

The Wise Furnace Co., Akron, Ohio, is distributing a 4-page folder covering Wise heating units designed for low-cost defense housing—gravity hand-fired and forced air (coal or oil-fired).

The forced-air unit is rated at 68,500 Btu at the bonnet for coal, or 75,300 Btu for oil at the bonnet.

282—Equalizing Damper

Anemostat Corporation of America, 10 East 39th Street, New York City, has just issued "Anemostat Equalizing Damper," a four-page 8½ x 11 bulletin. It describes their new equalizing damper which, it is claimed, is used for equalization of one sided air flow—directional control and the volume control up to 60 per cent of the supply air.

283—Welding Stainless Steel

Republic Steel Corporation, Republic Building, Cleveland, has published a 24-page booklet containing complete information on the welding of Republic Enduro stainless steel by the principal commercial processes. The booklet is illustrated with welded samples and products, also proper and improper welded joint design.

284—Catalog No. 41

Pier Equipment Mfg. Co., Benton Harbor, Michigan, manufacturers of Ace spot welders, has just published Catalog 41, containing a description of the various essential elements and the various types of foot-operated and

motor-driven automatic welders made. A description of the new Type 47 Automatic Weld Timer for use with any size manually operated Ace welder is included.

285—Waterproof Weldwood

United States Plywood Corporation, 616 W. 46th St., New York City, has prepared a 4-page folder on Waterproof Weldwood for aviation, marine and other technical applications. This company manufactures flat and molded aircraft and marine plywood, conducts its own logging, veneer cutting, plywood manufacturing and molding operations. Some indication of the scope of the U. S. Plywood war effort is given, and the research organization offers advice and suggestions to manufacturers.

Waterproof Weldwood is a resin-bonded plywood, pioneered by U. S. Plywood in 1932 and now sometimes referred to as "plastic plywood."

FOR YOUR CONVENIENCE

American Artisan, 6 N. Michigan Ave.

Chicago, Ill.

Please ask the manufacturer to send me more information about the equipment mentioned under the following reference numbers in "New Products" and "New Literature." (Circle numbers in which you are interested):

71	72	73	74	75	76	77
78	79	80				
271	272	273	274	275	276	277
278	279	280	281	282	283	284
285						

Name

Company

Address

Are you Manufacturer Jobber Dealer

HERE'S THE PLACE To Make Money NOW!

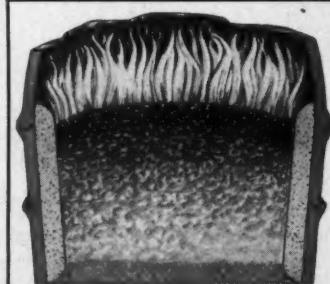


Every furnace owner in your neighborhood is a prospect for a FIRELINE job. They want to save fuel and preserve firepot castings; you want a profitable item you can get and sell right now. Your helper can install Fireline in a few hours without taking down the furnace. Send now for instructions on how to get this business.

FIRELINE IS FIREBRICK IN PUTTY FORM



You merely tamp it into place around the firepot and smooth it off with a trowel. If the castings are cracked, it avoids buying new ones... If they are good, it protects against fire damage.



Saves Fuel!

A Fireline refractory lining in the firepot radiates the heat across the entire fuel bed. The result is complete combustion of all the fuel; no unburned coal in the ashes. Eliminates smoke, soot, and dirt.

FIRELINE STOVE & FURNACE LINING CO.
1816 Kingsbury St. Chicago, Illinois



HUSSEY COPPER joins THE LIBERTY FLEET

● The Liberty Fleet . . . America's precious war born fleet of cargo vessels . . . depends on copper at all possible points where corrosion can attack.

Doing yeoman service in these numerous vital applications is Hussey Copper . . . providing full resistance to corrosion and an ease of workability and uniform quality that is helping expedite the three-ships-a-day goal sought by America's ship-builders.

Hussey Copper, the Victory Metal, vital to thousands of other applications, lends this magic touch of speed and utmost dependability.

HUSSEY

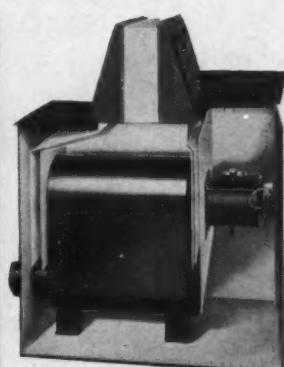
U. S. Maritime Commission Photos.

C. G. HUSSEY and COMPANY

(Division of Copper Range Co.)

ROLLING MILLS AND GENERAL OFFICES: PITTSBURGH, PA.
WAREHOUSES IN PRINCIPAL CITIES

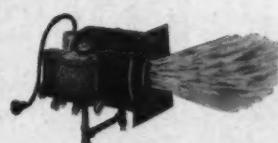
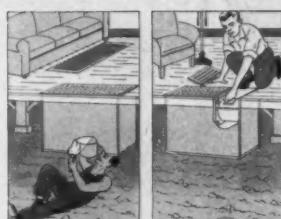
★ ★ ★ ★ ★ King Cole ★ ★ ★ ★ ★ OIL BURNING ★ ★ ★ ★ ★ FLOOR FURNACES



King Cole furnaces will help YOU get those Defense Housing Heating jobs . . . will open up new fields in small home heating for YOU . . . for King Cole Floor Furnaces have everything desired to assure heating perfection built into them . . . they have output capacity from 30,000 to 50,000 B.t.u. . . . they conserve space and fuel . . . are easily installed and heat perfectly and inexpensively . . . are made in three sizes . . . burn No. 1 or 2 fuel oil, or kerosene . . . are tested and approved by The National Board of Fire Underwriters . . . have two separate compartments within the casting . . . one for cold air duct and also the burner unit, as well as other necessities . . . the other is the warm air compartment and heating unit, scientifically designed so as to deliver uniformly heated air throughout the entire grille.

SERVICED FROM ABOVE THE FLOOR LEVEL

Another outstanding King Cole feature . . . Burner and complete assembly are easily accessible from the floor level, inside the building. This eliminates inconvenient and expensive repairs or service in basementless houses.



The New Oil Burner, which is Underwriter Laboratory Approved, is a horizontal, vaporizing, pot-type burner, with no moving parts. This assures longer wear without costly call-backs.

All in all King Cole Furnaces meet modern day requirements in heating, metal conservation and economy. You should know all about them, and how they can aid you in securing business.

Write for full information Now!

★ ★ ★
COLE HOT BLAST MFG. COMPANY
3108 West 51st Street
Chicago, Ill.

HERE'S A NEW WAY TO SELL FILTERS



... don't just sell a single change in air filters . . . sell a box of filters. RESEARCH makes it easy with a complete selling plan.

IT PAYS TO **SELL-A-BOX** OF AIR FILTERS



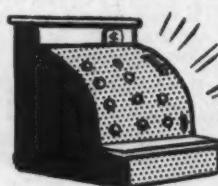
SELL 6 FILTERS, an entire box, enough for at least a year's service (filters should be changed twice a year, at least)



IMPROVES HEATING . . . because your customers will change their filters more often . . . and thus, eliminate troubles.

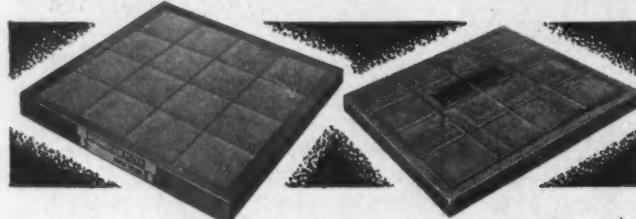


SAVES TIRES . . . only one delivery trip instead of two or three because you Sell-A-Box.



INCREASES PROFITS . . . because you double and triple air filter profits with a single sale.

RESEARCH AIR FILTERS



"100 SERIES" disposable filter . . . bound by fiber frame . . . high cleaning efficiency.

"200 SERIES" exclusive re-usable filter, uses no critical materials

Write for full details.

**RESEARCH PRODUCTS CORP.,
MADISON, WIS.**

GET IN THE SWIM

SELL THE NEW WISE FURNACE for **DEFENSE HOME HEATING**

There's plenty of tough competition ahead of you for the defense home heating business and you'll have to be able to supply a unit that will perform faultlessly for many years to come in order to get the lion's share of the business in your territory. Wise now has available the cast iron coal or oil-fired unit illustrated. This unit may be used for either gravity or forced air heating. The coal-fired unit has a capacity of 44,880 Btu gravity, and 66,000 Btu forced air. The oil-fired unit — 49,000 gravity and 75,000 forced air. If the occasion warrants, it can quickly and cheaply be converted from oil to coal firing.



Here's a unit with which you can really "get in the swim." Dependable, economical and efficient it is the answer to your defense home heating problem. Further information available on request, please write for it.

Write for Literature!

THE WISE FURNACE COMPANY

AKRON

OHIO

With the Manufacturers . . .

Allen Billmyre Corporation Moves

Allen Billmyre Corporation, manufacturers of centrifugal type Turbo blowers and exhausters, Exidust Vacuum cleaners, pneumatic conveying systems, rock drill dust control systems, Dryset steam press vacuum systems, formerly of South Norwalk, Connecticut, is now located in a new plant at 431 Fayette Avenue, Mamaroneck, N. Y., with new facilities, larger personnel, and day and night operation.

Ryerson's 100th Anniversary

Joseph T. Ryerson & Son, Inc., 16th & Rockwell Sts., Chicago, is celebrating 100 years of business. In 1842, the founder, Joseph T. Ryerson, at the age of 29, went west from Pittsburgh to Chicago and started his small "Pittsburgh Iron Store" on the banks of the Chicago river.

Back in 1750, members of the Ryerson family were developing ore deposits in northern New Jersey—making pig iron from ore found on property owned by a syndicate, of which George Ryerson was a member.

Edward L. Ryerson, grandson of the founder is chairman of the board of both Ryerson and Inland Steel Company, its parent company. His brother, Joseph T. Ryerson, served as president of Ryerson during the first world war, and continues as a director of Inland Steel. Everett D. Graff, 35 years with the Ryerson Company, is now its president.



Headquarters remain in Chicago, with plants in Jersey City, Boston, Edward L. Ryerson Philadelphia, Buffalo, Cincinnati, Detroit, Milwaukee and St. Louis, with sales offices in many cities.

The Ryerson Company, typical of the steel warehousing business, renders an important service to industry by making available from stock thousands of sizes and kinds of steel products—particularly important on small orders. Steel mills can not handle small orders advantageously because they necessitate accumulating many orders to make a rolling, which often takes weeks or months. In war-time, Steel-in-Stock is even more important.

Philip D. Block Dies

Philip D. Block, chairman of the Executive Committee of the Inland Steel Company, Chicago, died June 30, at the age of 71. Mr. Block had been president of the company for 22 years and had continued actively as chairman of the executive committee since April 30, 1941.

Mr. Block was a principal factor along with his father, Joseph Block, and the late George H. Jones, in the organization of Inland in 1893 and has served as treasurer, purchasing agent, vice president and in 1919 became the fifth president which position he held until April 30, 1941.

Mr. Block was also a director of the First National Bank, Chicago. He served his industry for many years on committees of the American Iron and Steel Institute and was well known for his strong aggressive leadership. He was a member of the Mid-Day Club, Standard Club, and Lake Shore Country Club.

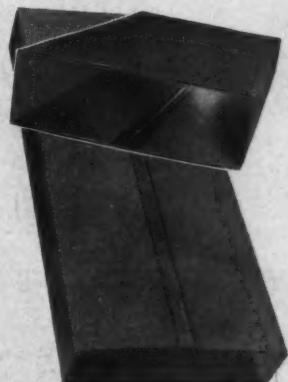
A brother, L. E. Block, has ably assisted his untiring efforts in the Inland Steel Company rise from a modest beginning to one of the large steel companies of today.

Besides his brother, L. E. Block, Philip D. Block is survived by his wife, a son—Philip D. Jr., a daughter and three sisters.

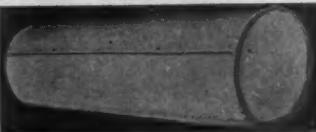
A·R·A SHEETS

Are Now Available for

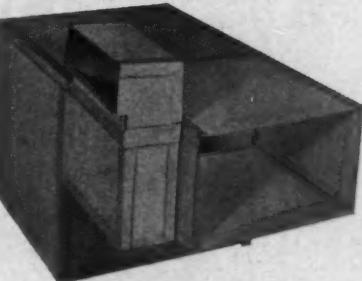
DUCT WORK
FITTINGS • CASINGS
AND "PANNING" JOISTS



A.R.A. Sheets are tough yet flexible (mullen tested over 200 lbs. per sq. in.) . . . and being fire-proofed and water-proofed their uses are many. They can be fabricated into fittings for warm air and air conditioning systems as well as casings of various kinds.



A.R.A. Sheets are light in weight, will not dry out, crack, crumble or chip, have a high insulating value (K.45 B.t.u.) . . . and good sound deadening properties. They are easy to handle, will bend without breaking and can be rolled, punched, scored and die cut, still retaining their rigidity and strength.



Also used for "Panning" joists for cold air returns.

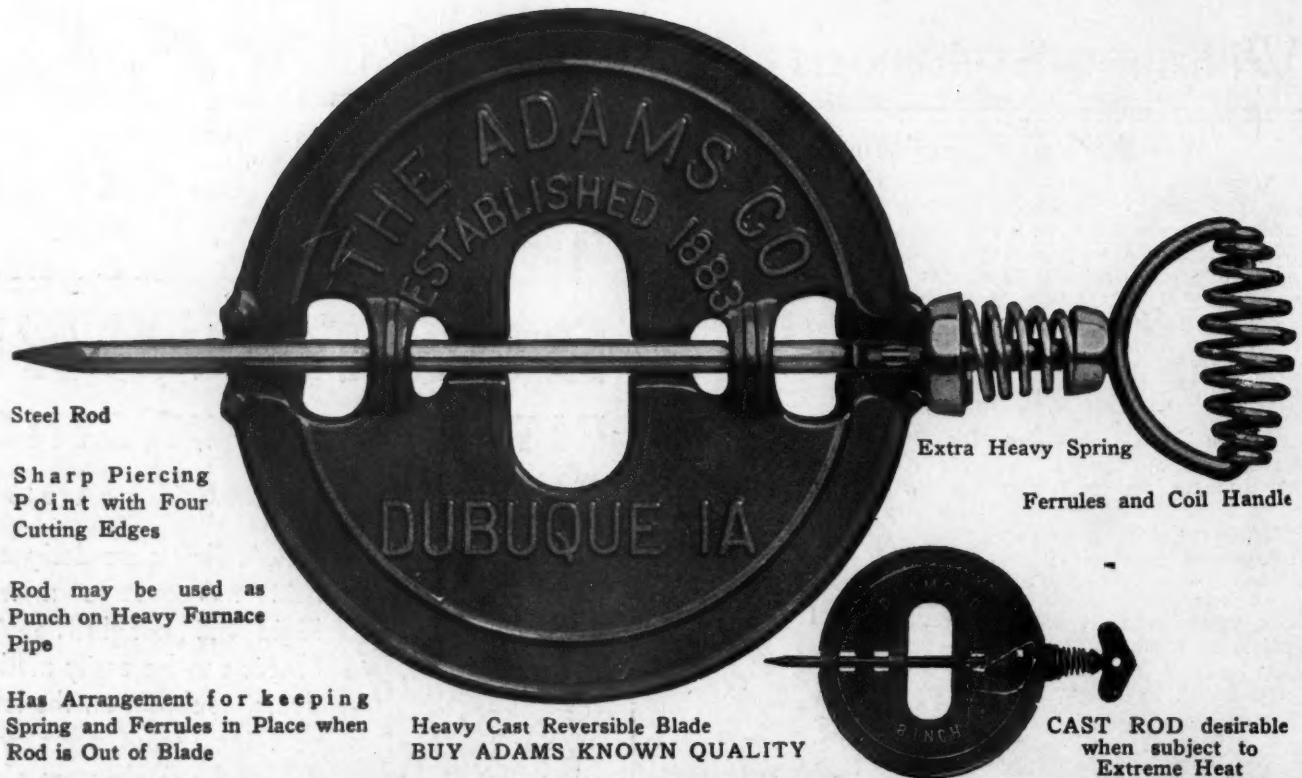


A.R.A. Sheets are shipped in cartons. Each carton contains 20 sheets 33"x48" or 40 sheets of 16 1/2"x48". A carton weighs about 100 lbs.

Write for Samples and Information

GRANT WILSON, INC. • CHICAGO

4101 W. TAYLOR STREET



Rod may be used as
Punch on Heavy Furnace
Pipe

Has Arrangement for keeping
Spring and Ferrules in Place when
Rod is Out of Blade

Heavy Cast Reversible Blade
BUY ADAMS KNOWN QUALITY

CAST ROD desirable
when subject to
Extreme Heat

DIAMOND SMOKE PIPE DAMPER

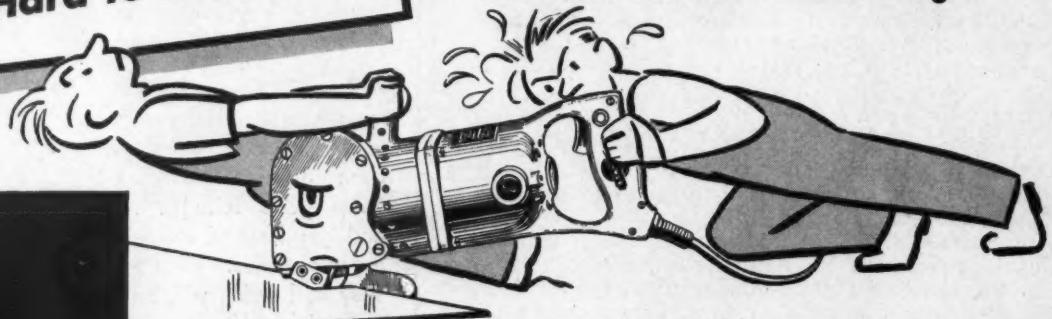
Manufactured by THE ADAMS COMPANY Dubuque, Iowa, U.S.A.

ESTABLISHED 1883

ELECTRIC TOOLS
are Hard to Replace



KEEP BLADES SHARP
—and Unishears will Cut Faster . . .
use Less Current . . . Last Longer



Dull blades rob you of the high cutting efficiency that is built into Stanley Unishears. Keep them sharp . . . boost output, and protect the tool against overloading and premature wear. A little time out for sharpening saves a lot of time and trouble on the job.

When parts wear out, have your Unishears repaired or rebuilt; don't discard it. Repair service is maintained by Stanley, and replacement parts are available. Stanley Electric Tool Division, The Stanley Works, New Britain, Connecticut.



**KEEP 'EM ON THE JOB
WITH PROPER CARE**

STANLEY UNISHEARS
THE ELECTRICALLY DRIVEN HAND SHEARS

With the Manufacturers . . .

Copper and Brass Membership

The Copper & Brass Research Association, 420 Lexington Ave., New York City, has accepted for membership the application of Wilbur B. Driver Co., of Newark, N. J.—melters and manufacturers of resistance wires. The company also manufactures nickel chrome alloys, copper nickel alloys, pure nickel and Monel, wire ribbon and strip. It is also a producer of beryllium copper alloys and stainless steel. Wilbur B. Driver is president, R. O. Driver is vice president, and Sidney A. Wood is sales manager.

Forty other companies comprise the membership of the Copper & Brass Research Association, organized in 1921:

The American Brass Company, Baltimore Brass Company, Bohn Aluminum & Brass Corporation, Bridgeport Brass Company, The Bridgeport Rolling Mills Co., The Bristol Brass Corporation, Chase Brass & Copper Co., Incorporated, Chicago Extruded Metals Company, The Electric Materials Co., Extruded Metals, Inc., Foster Wheeler Corporation, Hudson Wire Company, C. G. Hussey & Company, Ilco Copper Tube & Products, Inc., Lewin-Mathes Company, The Linderme Tube Co., The Mackenzie Walton Co., Incorporated, The Miller Company, Mueller Brass Co., National Brass & Copper Company, Inc., The National Copper & Smelting Co., New England Brass Company, The New Haven Copper Co., Penn Brass & Copper Company, Phelps Dodge Copper Products Corporation, The Phosphor Bronze Smelting Company, The Plume & Atwood Mfg. Co., Revere Copper and Brass, Incorporated, The Riverside Metal Co., Scovill Manufacturing Co., The Seymour Manufacturing Co., Somers Brass Co., Inc., Stamford Rolling Mills Co., The Thinsheet Metals Company, Titan Metal Manufacturing Company, United Wire & Supply Corporation, Waterbury Rolling Mills, Inc., A. H. Wells & Company, Inc., Western Cartridge Company, Wolverine Tube Division.

Sound Measurement Test Code for Fans

The National Association of Fan Manufacturers, 5-208 General Motors Building, Detroit, has adopted a standardization program covering those types of fans designed for application in, and furnished under specifications for air conditioning, heating, ventilating and general air handling problems. These Standards are published in the NAFM Form X-12.

In order to provide a standard method of measuring sound in fans and blowers, this association has prepared and presents in Bulletin No. 104 "Sound Measurement Test Code for Centrifugal and Axial Fans."

Incorporated in the code are standards previously adopted or tentatively accepted by the American Standards Association and the U. S. Navy.

Penn Boston Branch

The Boston Branch of Penn Electric Switch Co., Goshen, Indiana, is now located at 50 Hunt St., Watertown, Mass. A. W. Barr is branch manager.

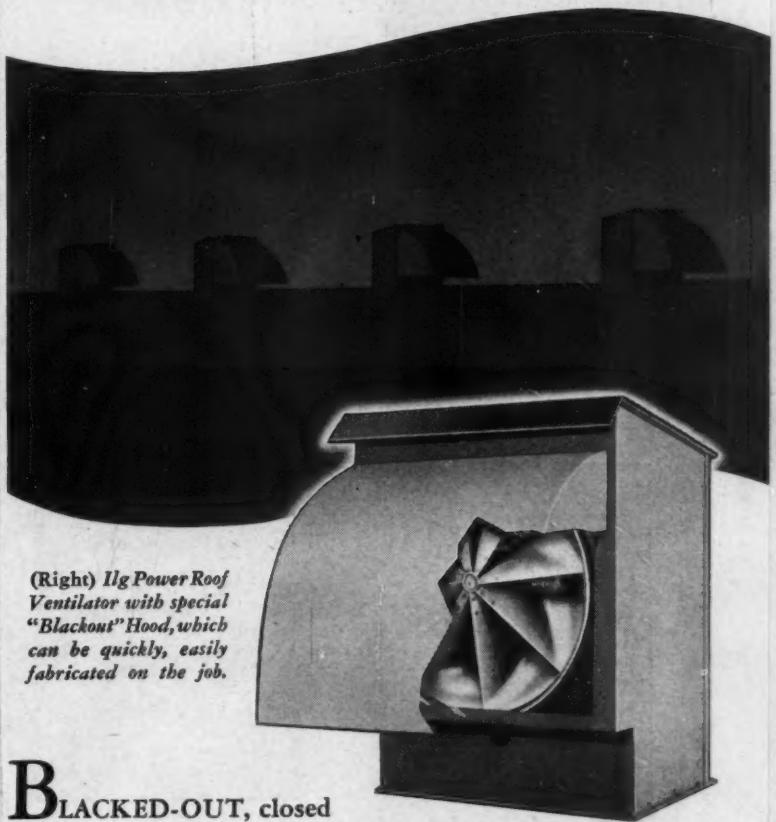
Personal Appointments

J. D. Knight has been named manager of Allegheny Ludlum Steel Corporation's Detroit district sales office. Formerly assistant manager in Detroit, Mr. McKnight has been associated with Allegheny Ludlum for the past six years, following his previous connection with the Murray Corporation of America, Detroit.

Henry C. Bitter is handling sales and service for The American Warming and Ventilating Company of Toledo in Michigan and Ohio.

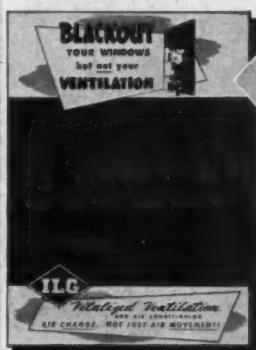
HOW TO SOLVE THE PROBLEM OF

BLACKOUT VENTILATION



(Right) Ilg Power Roof Ventilator with special "Blackout" Hood, which can be quickly, easily fabricated on the job.

BLACKED-OUT, closed windows accentuate the real need for positive, adequate ventilation! From coast to coast, "Blackout" Hoods on Ilg Power Roof Ventilators plus Hooded Fresh Air Inlet Louvers, are now blocking out light from plants, while "worn-out" air, odors, excessive heat, dust or harmful vapors are removed swiftly and quietly—regardless of weather conditions!



NEW BULLETIN 304 Get Your Copy Today!

... gives you the complete story on "blackout" ventilation... shows a typical Ilg engineered installation... illustrates the design of "Blackout" Hoods and positioning of Fresh Air Inlets.

DIMENSION DRAWINGS—of "Blackout" Hoods and Fresh Air Inlets for the specific job you are figuring on will be furnished on request.

ILG ELECTRIC VENTILATING CO., 2871 N. CRAWFORD AVE., CHICAGO, ILL.
OFFICES IN 41 PRINCIPAL CITIES CONSULT YOUR PHONE DIRECTORY



Vitalized Ventilation

AND AIR CONDITIONING

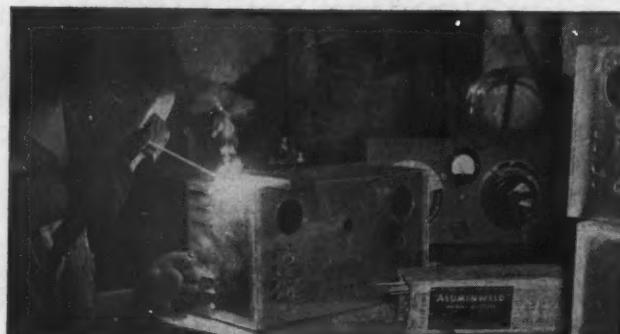
AIR CHANGE... NOT JUST AIR MOVEMENT!

HERE'S BUSINESS that helps win the war!



Quicker Installation.

This Lincoln-welded grinding booth for magnesium propellers and other parts employs patented centrimerge wet-dust collecting. Eliminates duct work, speeding installation for war production. Eliminates fire hazard. Courtesy Schmeig Sheet Metal Co., Detroit, Mich.



Speedy and Straight. Ordnance equipment such as these aluminum aircraft radio boxes can be fabricated speedily by Lincoln Welding. Localized heat of this high-speed welding minimizes warpage of sheets.



Space-Saver. This storage bin for nuts and bolts is designed for installation around a round building column to save valuable floor space for war production. Split in half for assembly. Lincoln welded from 18-gauge black iron. Courtesy P. Feiner, New York.

Other valuable suggestions for ways to keep your shop on the offensive with arc welding are given in "It's WELDING TIME," issued periodically. Free on request.

THE LINCOLN ELECTRIC COMPANY
Cleveland, Ohio

Largest Manufacturers of Arc Welding Equipment in the World

Unit Heaters, Ventilators, Frozen

INVENTORIES of unit heaters, unit ventilators, convectors, and blast heating coils have been frozen in the hands of manufacturers by a telegraphic order, it was announced March 26 by Director of Industry Operations Knowlson.

Charles L. Meyer Dies

Charles L. Meyer, mechanical and sales engineer for L. J. Wing Mfg. Co., New York City, in the metropolitan district, New York State, Connecticut and New Jersey, for the past 18 years, died on June 26 at his home in Hollis, L. I.

National Warm Air Convention

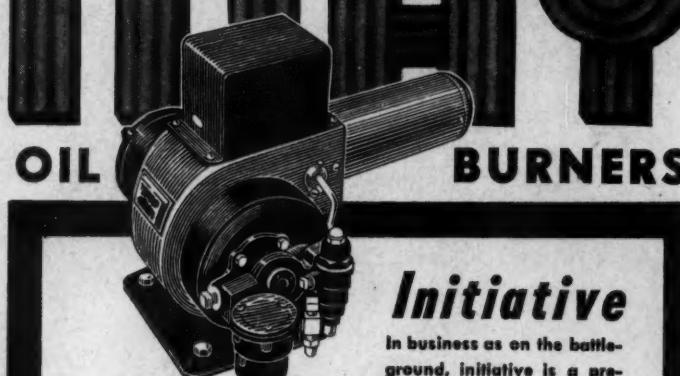
(Continued from page 60)

rial which has not heretofore been manufactured. These two gentlemen also explained some of their personal findings in war work procurement, substantiating in the most part the remarks of Mr. Byrd.

Golf Tournament

On Wednesday, following the June convention of the National Warm Air Heating & Air Conditioning Association, the Chicago Convention Committee provided the facilities for a golf tournament and party at Olympia Fields Country Club. A number of the members stayed over to avail themselves of this opportunity and the results of their efforts are presented below. Prizes were all in the form of war savings stamps and non-golfers as well as golfers participated in the awards. J. Harry Ebbert, of the Chicago committee, was in charge of the

QUIET WAY OIL BURNERS



Initiative

In business as on the battle-ground, initiative is a pre-requisite of success. Quiet

May "took the initiative" in the oil burner's pioneer days . . . retained it ever since with an unbroken series of trail-blazing engineering achievements. The famed Gerotor Pump, to cite one.

May Oil Burner Corp. • Baltimore, Md.

"SUPPLIERS TO UNCLE SAM"

golf party.

Player	Gross	Handicap	Net
F. R. Bishop	128	48	80
J. E. Maynard	110	35	75
R. King	97	23	74
R. F. Fisher	105	30	75
K. B. Thorndyke	101	33	68
H. Courtoul	106	33	73
H. S. Sharp	101	22	79
H. J. Carr	98	24	74
C. E. Price	88	14	74
A. L. Rybott	95	6	89
C. G. Andren	87	11	76
R. G. Strangward	115	20	95
C. Anderson	120	25	95
W. Percival	81	..	81
H. Ebbert	97	5	92
H. MacCubbin	90	8	82
G. Wilson	110	20	90
H. Hiller	94	15	79
G. Baehr	110	25	85
J. Ingold	116	30	86
J. Owens	116	30	86

Prize Winners

Golfers:	
Carl Andren	A. L. Rybott
Wright Percival	G. Baehr
Fred Bishop	J. Owens
R. W. King	J. Ingold
H. J. Carr	Non-golfers:
C. E. Price	W. E. Gurman
G. Wilson	Geo. Boeddener
Harvey Hiller	Bob Mattingly
H. S. Sharp	Ed Carter
H. MacCubbin	Ed Meusel

Burg's Pep Talk

At the luncheon meeting presided over by Vice-President Frank Mehrings of The Meyer Furnace Company, C. T. Burg, sales manager of Iron Fireman Manufacturing Company, and a well-known dinner speaker, advised listeners not to be alarmed just be-

...if you are doing government work, you can still buy a LOCKFORMER

LIKE all other equipment which really contributes to the war effort—either by doing an essential job or by speeding war construction—Lockformers can be sold only to holders of proper priority certificates.

If your shop is working on plant conversion, new plant construction or other war essential projects, you should by all means use the priority privileges granted you to get the Lockformer you need. You'll be doing yourself as well as the government a good turn.

SIXTEEN TIMES AS FAST

Lockformers make Pittsburgh Locks, Double Seam Locks, Drive Cleats and Right Angle Flanges in a fraction of the time required by hand methods. Lockformers pay for themselves quickly out of savings effected in fabrication—can be expertly operated by the newest apprentice after five minutes instruction—are unconditionally guaranteed in writing.

Find out about the wide range of models and prices. Write for the Lockformer Catalog.



ONE MAN AND A LOCKFORMER CAN MAKE MORE PITTSBURGH LOCKS THAN SIXTEEN MEN WORKING AT EIGHT BRAKES.

The LOCKFORMER Co.
4617 ARTHINGTON STREET, CHICAGO, ILLINOIS

FURNACE MEN SING ITS PRAISES!



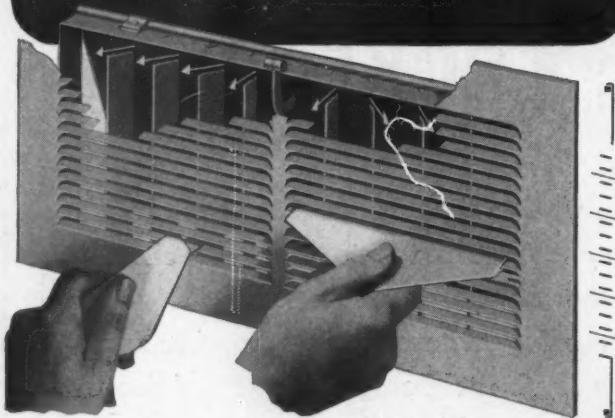
THIRTY years—year in and year out—praise for Tharco Asbestos Furnace Cement has continued to pile up. From the men who build furnaces and from the men who repair furnaces the chorus of approval has steadily grown. Tharco has become the industry's standard. Why? Because it's made right, it works easily, it stands up under punishment—and the successful Tharco formula, developed by Armstrong, remains exclusive Armstrong property. You work better because it works better.

Ask for a free copy of our valuable folder: "The Proper Use and Care of Furnace Cement."

AT LEADING JOBBERS
THARCO
Asbestos
FURNACE CEMENT
The Armstrong Company—Detroit • Dallas • Chicago



INDEPENDENT Air Conditioning Registers



No. 439 Meets Every Requirement FOR DEFENSE HOUSES

This improved register affords the widest latitude in deflecting air flows four ways. Valve opens complete 90 degrees to admit full flow of air from horizontal air duct. Simple, modern design conserves material and presents handsome appearance. And equally important, it is moderately priced to give big value. Made in sizes to meet all standard requirements. Send for catalog.



HORIZONTAL GRILLE BARS, formed in the wrought steel face, are set to deflect air flow about 15 degrees downward. Being flexible, they may be bent, before or after installing, to direct the air flow to any other angle upward or downward, or straight outward.

VERTICAL DEFLECTING VANES attached to the back of the register face direct the air flow straight outward in the center, 30 degrees right and 30 degrees left—the arrangement required for most installations.

These deflecting vanes also are flexible and may be set to direct the air flow all right, all left, or any combination of directions.

Grille bars and deflecting vanes are easily adjusted with tool accompanying each shipment.

Always leading. Always progressing.

42C

The INDEPENDENT REGISTER Co.

3747 East 93rd Street • Cleveland, Ohio

cause they were bewildered because the whole world is bewildered at the present moment. About all the average individual can do is to participate in civilian defense, buy war bonds, and try to obtain war work. The Iron Fireman Company is getting war work, but the only way to get it seems to be to go out and sell your manufacturing ability to anyone who will listen. One successful way is to make up a book showing and telling a complete story on your company with pictures of the plant and products manufactured, the personnel, the machines, workers' experience and listing all of the various types of work done. Most industries doing war work did just exactly this thing and worked weeks and sometimes months, in figuring bids and proposals, and selling their firms and their products to anyone and everyone.

Mr. Burg suggested that all industries should keep their eyes on the post war period. In the post war period, the sales department will once again stand preeminent, whereas today manufacturing is practically the only problem. Any good company has four assets—finance, plant, organization and its name. This last—the name—of the company and its products should be all important because today the problem of most industries is to keep its name and its products before the country so that in the post-war period the name and the product will not have to be sold all over again. This, if no other reason, should be reason enough for most firm's advertising and selling and calling on their old customers.

The Chicago convention committee, which for several June meetings past has entertained the association highly, duplicated its performance of past years with a cocktail party and buffet luncheon paid for by cash contributions of the various Chicago supply firms and manufacturers.

Summertime IS FURNACE REPAIR TIME

The Office of Price Administration suggests... and it's a good suggestion too...that NOW is the time to fix furnaces. Do not wait until next winter to go after this business...for necessary parts are available now, but may not be later. Also point out to your customers that they will be aiding the war effort by making the necessary repairs which will assure maximum heating efficiency from their furnace. Peak furnace efficiency means minimum fuel consumption as well as comfortable, healthful heat which will keep workers on their toes to do their bit in the tremendous war production program in effect. Remember the keynote is to conserve metals by repairs...and if new parts are necessary the Northwestern Stove Repair Company can supply most every type and kind...So don't forget the furnace 'til Fall. Fix it NOW!

NORTHWESTERN STOVE REPAIR CO.

662 West Roosevelt Road

Chicago, Ill.

Kruckman- Remodeling Program

(Continued from page 33)

hauled by Congress. The Truman Committee recently blasted the plus-a-fixed-fee system, and Congress is expected to try to legislate the system out of existence, if it can beat the lobby that is out to stop the Congressional action. It is probably the most powerful lobby in the country. It is not a lobby in the usual conventional sense. There is no organization that is identified as such. But like the suit of clothes in the salesman's expense account, it is there.

It is significant, in announcing insured loans for \$5,000 for conversion to provide shelter for War workers, that FHA reported the actual start of new homes under the FHA plan was 35% lower this May than it was last May and that applications for insured loans in May were 43% off compared to May, 1941. It is understood the applications have dived some more since the last report. Unofficially the word here is that home building this year over-all is only 40% of the total for a similar period last year. It is the job of FHA to sell the public the idea of investing its surplus in remodeling to house War workers and to secure insured loans to build housing for families in War areas. It hopes private builders will construct 270,000 permanent family dwellings for War workers during the next 12 months. These homes, without utilities, are to rent for \$50 per month. The over-all home building program still is based on the general outline of 100,000 units to be provided by public funds, and 400,000 by private finance. It is purposed that FHA shall insure half of the pri-

**Today's War-Time
Industrial Market
is Your
BEST BET NOW**

**-LET CLARAGE EQUIPMENT
HELP SELL THE JOBS!**

New war plants — and plants being converted — need heating, ventilating, exhaust and blow pipe installations. This high priority business can be your salvation. Specify Clarge Fans, Blowers, Unit Heaters — Nationally known and Nationally accepted, these highest quality air handling products help you land the jobs. Write for any information desired.



EXHAUST FANS



VENTILATING FANS

COMPLETE
AIR CONDITIONING
COOLING
VENTILATION
FACTORY HEATING
MECHANICAL DRAFT

FANS and BLOWERS
for
INDUSTRIAL NEEDS

CLARAGE FAN COMPANY — KALAMAZOO, MICH.
SALES ENGINEERING OFFICES IN ALL PRINCIPAL CITIES

WARTIME HEATING UNITS

**GIVE MORE HEAT
ON LESS FUEL**

WITH



**Dependable
Controls...**



The favorite Heating Unit in thousands of new War Homes, and in camps, barracks this year will be the "Packaged" Unit with Vaporizing Type Oil Burner and A-P DEPENDABLE OIL CONTROLS. It's the best assurance of Oil Conservation — more heat per appliance-pound — more value per heating-dollar — and dependable trouble-free heating.

Learn the sales advantages of A-P DEPENDABLE CONTROLS. Then USE these advantages to show your customers the way to ECONOMICAL War-time Heating.

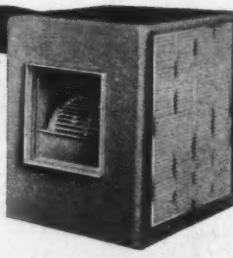
AUTOMATIC PRODUCTS COMPANY
2452 NORTH THIRTY-SECOND STREET
MILWAUKEE, WISCONSIN

**DEPENDABLE
Oil Control Valves**

AIR COOLERS

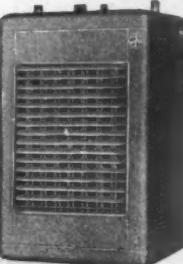
15 Models
1,000 to 11,000 C.F.M.





BLOWERS

Standard and heavy duty
blowers-6" to 66"



UNIT HEATERS

Blower and
fan types
Gas-fired
Self-Contained
Four sizes



FLOOR FURNACES

Floor and dual register models
Three sizes
Write for complete catalogs



UTILITY
FAN CORPORATION

4851 S. Alameda St. Los Angeles, Calif.

it's Sensational
INSTALLED IN
20 MINUTES

The Vitroliner Chimney for Defense Houses is supported from the ceiling line by means of a new tapered cylinder support which automatically extends 9" below ceiling line as illustrated. This new feature makes the installation of the Vitroliner Chimney so simple, that it can be accomplished in twenty minutes or less. The installation is fool-proof, strong and permanent, and fire-proof throughout.

The Vitroliner Chimney is far superior and replaces the masonry chimney. Features are long life, fully insulated, durable and fire-proof construction, quick installation, superior draft, de-mountable construction.

Thousands of Vitroliner Chimneys are now being used in Defense Houses.

Write for details to



**CONDENSATION
ENGINEERING
CORPORATION**

VITROLINER
The Superior Vent Pipe

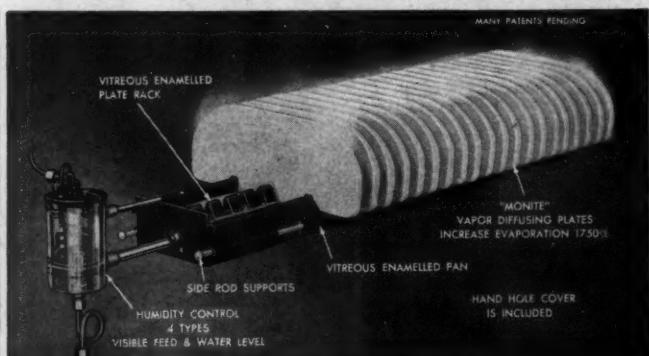
Trade Mark Registered

2515 ARCHER AVENUE • CHICAGO, ILL. • PHONE CALUMET 4362

vately financed projects.

Meanwhile, WPB seeks to strengthen FHA's remodeling efforts by suggesting several modifications of the L-41 Construction Order so far as it applies to repair and maintenance. WPB also amended Order P-46 to expedite the extension of electricity, gas and water utilities to War housing units everywhere. Despite these surface indications, there seems some lack of meeting of minds on the housing question between WPB and the various Housing agencies. WPB sits on the materials lid and relatively makes it almost as difficult for the Housing agencies as it does for the rank outsider. FHA may paint rosy pictures in its public say, but the private remarks of its responsible officials sound discouraged and disheartened.

The War Department has its own Civilian Housing Section which seeks immediate construction of 197,000 housing units for civilian workers at military posts, camps, stations and at war production plants, wholly financed by Government. It is interesting to note that the Law provides Army housing for officers, enlisted men, when permanent, shall cost, \$10,000 per unit for the officer, \$7,500 for a warrant officer and \$6,000 for an enlisted man. When the construction is temporary, the officer's house may cost \$7,500, the Warrant Officer's house \$5,000, and the enlisted man's dwelling \$3,500. The Navy plans 39,000 dwelling units for families, and 14,000 dormitories. The dormitories will be located chiefly in the Navy shipbuilding areas in the Northeast, the Southeast and on the Pacific Coast. Manpower Administrator McNutt, who has included National Housing Administrator Blandford on his Commission, ordered the Secretary of Agriculture to survey the shelter resources for migrant agricultural workers and directed him to make shelter or labor camps for the workers.



MONMOUTH HUMIDIFIERS

Authorized for Installation in All Homes

**AID NATIONAL DEFENSE
BY PRESERVING HEALTH**

Vitally Important because of Shortage of Doctors, Nurses, Hospitals;
BY ECONOMIZING FUEL;

to ease terrific load on mines, railroads, trucks, tires, men.

TO IMPROVE HEATING PLANTS

for fuel economy and better health. It's your duty and your greatest opportunity today for more business.

ORDERS GALORE AWAITS YOU

The simplest, surest order-getting method you ever saw lands them. It's what you want and need. Write for it.

MONMOUTH PRODUCTS CO.
1933 East 61st St. Cleveland, Ohio

The Greatest Name in Humidification

And finally, it is notable that those who own billions in property in New York City, both residential and business, apparently are slightly in the red or almost in the red, as street after street reveals, plastered with rent signs and have banded together in a great concerted drive to lure the suburbanite back to the City. They are taking full advantage of the difficulties created by gasoline rationing and transportation shortages on railways and buses.

Priorities

Regulation No. 11

(Continued from page 27)

certificates or orders assigning the ratings which he is applying or extending.

(3) A Class I Producer who applies or extends any preference rating pursuant to subparagraphs (1) or (2) of this paragraph (e), shall deduct the amount of any material which he has received or to which he has applied or extended such rating from the amount rated or otherwise authorized by his PRP Certificate when issued to him.

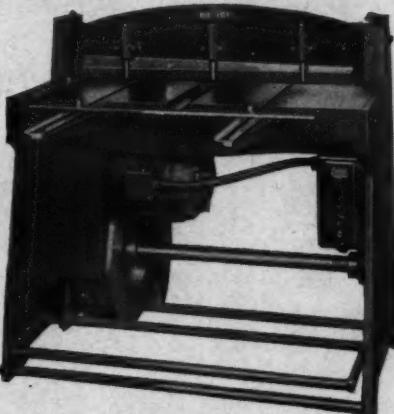
(f) Application and Extension of Preference Ratings. A Class I Producer may apply and extend preference ratings assigned by order or certificate in the manner heretofore permitted up to and including June 30, 1942. Thereafter, any Class I Producer who has filed his PRP Application may continue to apply and extend such ratings only in accordance with paragraphs (d) and (e) of this Regulation and subject to the provisions of Priorities Regulation

BUY WHITNEY-JENSEN
METAL-WORKING MACHINERY AND HAND TOOLS
FOR LONG LIFE AND ACCURACY

No. 72 SERIES

POWER SQUARING SHEAR

36" and 42" sizes
14 and 16 gauge



Quick in action, easy to operate, compact in size! This new WHITNEY-JENSEN Power Squaring Shear offers many advantages to sheet metal shops. One outstandingly distinctive feature is the simple, accurate, and positive blade adjustment. Another is the high speed of the machine—180 strokes per minute. Write today for a copy of our new circular, which gives full description and specifications of the three models available.

WHITNEY METAL TOOL COMPANY
91 FORBES STREET • ROCKFORD, ILLINOIS

WAGNER MOTORS

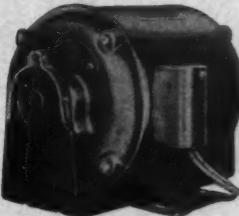
PLAY AN IMPORTANT PART IN OUR "ALL-OUT" WAR EFFORT

—they are now giving dependable service on refrigerating, air-conditioning, heating and ventilating equipment in defense industries, army and navy cantonments, ships, etc.

It takes good motors, and plenty of them, to keep equipment that contributes to the "all-out" war effort operating at top performance.

Wagner fully realizes this and is working day and night turning out more motors now than ever before, and is supplying these dependable motors wherever they are needed to help our country on to victory.

If the equipment you are manufacturing or installing is motor driven and essential in war production — consult Wagner. Twenty-five sales and service branches, located in principal cities, can be of help to you in selecting the right Wagner motor for the job.



①

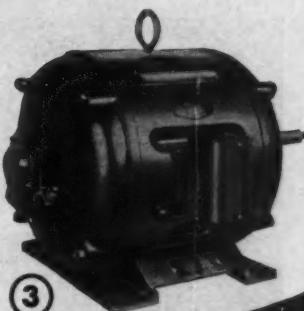
1. Type RA, Repulsion-Start-Induction Motor. The ideal motor for heavy-duty single-phase applications. 1/8 to 15-hp.

2. Type M, Shaded-Pole Fan Motor. For fans and blower drives where the fan or blower drives are mounted directly on the motor shaft. 1/125, 1/80, 1/40 and 1/30-hp.



②

3. Type RP, Squirrel-Cage Polyphase Motor. Because of a simple construction they are low-priced, easily installed, and exceptionally sturdy and dependable. 1/6 to 400-hp.



③



M42-13 Send FOR THESE FREE BULLETINS

Wagner Electric Corporation

6400 Plymouth Avenue, Saint Louis, Mo., U.S.A.

MOTORS • TRANSFORMERS • FANS • BRAKES

THESE ARE Your Customers!



YOU'LL SELL THEM FASTER
WITH
HESS
QUALITY EQUIPMENT

Defense workers, bankers, salesmen—these are your customers—people who appreciate the precision craftsmanship of the HESS line of quality heating equipment. You'll profit by HESS' financing and territory plan.

DEALERS:
Write TODAY for New 1942 Portfolio!

IN 1942 FEATURE—

selling, modernizing, replacing, repairing with

- ★ HESS Blower Filter Units
- ★ HESS Welded Steel Furnaces
- ★ HESS Automatic Oil Burners
- ★ HESS Automatic Coal Stokers

Quality Equipment from HESS
Costs Less!

HESS WARMING & VENTILATING CO.
1211 S. Western Avenue CHICAGO, ILLINOIS
Founded 1873

H&C DAMPER REGULATOR SETS



ECONOMY TYPE. Three ways to install: 1. With lock nut but without handle (for tamper-proof setting). 2. With handle and lock nut. 3. With handle and wing nut. Nut prevents damper vibration. Handle always indicates position of damper (Patent 2,146,142). Furnished with handy snap end bearing. Complete set in carton. Made only with $\frac{1}{4}$ " bearings.

LIST PRICE.....No. 40 1/4 S.....\$0.30

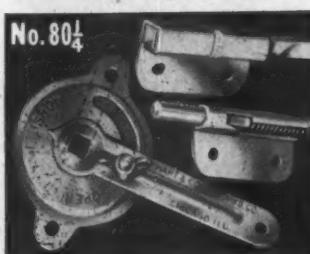
BRACKET TYPE. Nut holds damper securely, preventing vibration. Handle which indicates position of damper, may be left in place permanently or removed after adjustment (to prevent tampering). Snap End Bearing on $\frac{1}{4}$ " size, Solid Bearing on $\frac{3}{8}$ " size. Each set individually packaged.

LIST PRICES.....No. 50 1/4.....\$0.40
No. 50 3/4.....\$0.60

DISK TYPE. Like all H&C sets, this set is equally adaptable to splitter or regular dampers. Snap End Bearing on $\frac{1}{4}$ " size, Solid Bearing on $\frac{3}{8}$ " size. All parts are rust proofed. Complete set in carton.

LIST PRICES.....No. 80 1/4.....\$0.40
No. 80 3/4.....\$0.60

See your jobber or write for literature and sample.



HART & COOLEY MANUFACTURING CO.
HOLLAND, MICHIGAN • CHICAGO OFFICE: 61 W. KINZIE ST.

No. 3 as amended (944.23) (Amended Priorities Regulation No. 3 is published in this issue). After June 30, 1942, a Class I Producer who has not filed his PRP Application (unless he has been exempted or his filing date has been extended in accordance with paragraph (c) of this Regulation) may not extend any ratings; and may not apply any rating other than a rating specifically assigned to him for the purpose of plant expansion, construction or acquisition of items of capital equipment.

(g) Effect on Existing Orders and Certificates.

- (1) The provisions of this Regulation shall not modify the terms of Preference Rating Order P-90 as issued to PRP Units with respect to requirements for the second quarter of 1942. As to all requirements for the third quarter, the assignment of priorities assistance under the Production Requirements Plan will be effected solely by the PRP Certificate, subject to the terms of this Regulation, and the use of Preference Rating Order P-90 will be discontinued.
- (2) The provisions of this Regulation do not terminate any other existing order or certificate of the Director of Industry Operations granting preference rating assistance, but limit and prohibit the use of such orders or certificates by specified persons in the manner set forth above.
- (3) The provisions of this Regulation do not relieve PRP Units from compliance with the terms of any order of the Director of Industry Operations controlling the distribution or restricting the use of any specific material, including requirements for the filing or supplying of applications or other documents in connection with the purchase, sale, delivery or use of any such material.

Issued this 10th day of June, 1942.

J. S. Knowlson
Director of Industry Operations

Priorities Regulation No. 11 Metals List

(a) Any of the metals listed in subparagraph (1) below in any of the forms listed in subparagraph (2) below:

- (1) Metals:

Solder	Type Metal
Iron	Metal Carbides
Carbon Steel	Antimony
Alloy Steel	Arsenic
Stainless Steel	Beryllium
Aluminum	Bismuth
Magnesium	Cadmium
Copper	Cobalt
Brass	Iridium
Bronze	Mercury
Lead (including antimonial)	Molybdenum
Zinc	Palladium
Nickel	Platinum
Tin	Platinum-iridium
Cupro-nickel	alloy
Monel	Rhodium
Nickel-silver	Ruthenium
Chrome Nickel	Tungsten
Babbitt Metal	

- (2) Forms of Metal:

Anodes, bars, billets, blooms, blocks, castings (including die castings), cones, dust, extruded shapes, fabricated shapes, foil, forgings, ingots, pigs, pipe, plates, powder, rails, refinery shapes, rings, rivets, rods, scrap, sheets, shot, skelp, slabs, strip, structural shapes and piling, tie plates and track accessories, tube and tubing, tube rounds, wheels and axles, wire and wire rods, wire products (including barbed and twisted fencing, bale ties, nails, staples, rope and strand).

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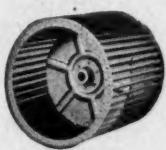
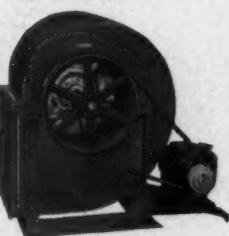
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No. 91 PUNCH



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CAPACITY
 $\frac{1}{4}$ -inch hole through $\frac{1}{4}$ -inch iron; $\frac{1}{4}$ -inch hole through $\frac{1}{8}$ -inch iron; 2-inch hole through $\frac{1}{8}$ -inch iron. Depth throat, 5 inches. Weight, 22 lbs.

No. 6 PUNCH



Length— $28\frac{1}{2}$ inches. Capacity— $\frac{1}{4}$ -inch hole through $\frac{1}{8}$ -inch iron; especially adapted for button punching or temporary work. Punches and dies $\frac{1}{8}$ " to $\frac{1}{2}$ " by $\frac{1}{32}$ ".

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No. 2 PUNCH



Length—23 inches. Capacity— $\frac{1}{4}$ -inch hole through $\frac{1}{4}$ -inch iron. Punches and Dies in sizes $\frac{1}{8}$ -inch to $\frac{1}{2}$ -inch by $\frac{1}{32}$ " to $\frac{1}{4}$ " by $\frac{1}{64}$ ".

CHANNEL IRON PUNCH

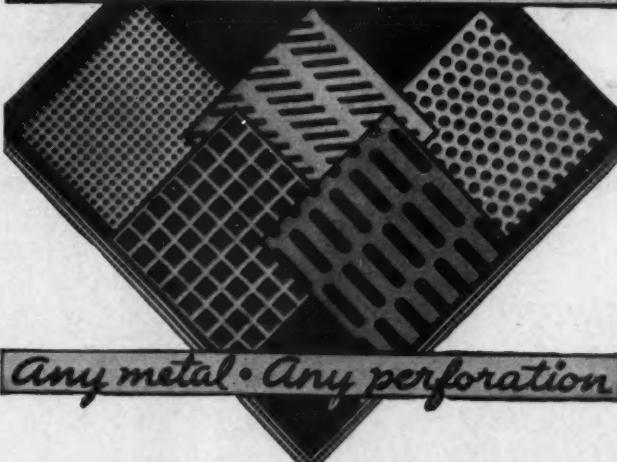


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Heating and Insulation Requirements

(Continued from page 39)

Further down the column, opposite "outside design temperature" for $+10^{\circ}$ F., it will be found that the total heat loss factor is 511.

From Table 2 the following combination is worked out:

Walls, 5:	Asbestos cement siding, $\frac{1}{2}$ " gyplap sheathing— $\frac{1}{2}$ " sheet- rock interior with 3" Red Top wool	74
Ceiling, 14:	$\frac{1}{2}$ " sheetrock with 3" Red Top wool	89
Floor, 15:	Double floor on joists with 3" Red Top wool	59
	Total factor	222

Example: One-Story with Basement

Assume a one story standard frame house, with basement, located near Kansas City where the outside design temperature is -10° F. Its area is 1050 feet and its total heat loss factor cannot exceed 214.

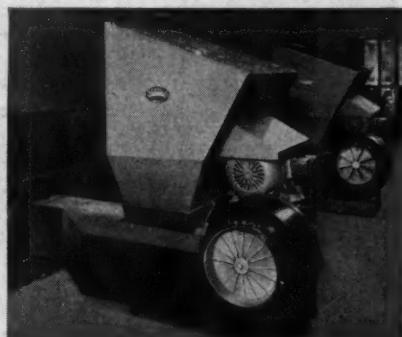
Note that this total factor is well below the one required. By reducing this factor to a minimum through the use of thick insulation we find that the smallest size unit listed would meet the requirements.

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to further economize in size of heating unit but with the use of maximum insulation greater summer comfort will be received.

Since this factor need only be divided between wall and ceiling insulation we can calculate the following:

Wall, No. 1, frame: Clapboards with wood sheathing, rocklath & plaster with 3" Red Top wool	64
Ceiling, No. 8: rocklath & plaster with 3" Red Top wool	88
	152

Here again by using maximum insulation the minimum rating may be used. In addition to savings in heater size additional economy will be realized through greater fuel savings.

Note: Table II adequately covers all combinations of constructions to give total heat loss allowances in Table I with exception of some areas in the coldest design zone. In some constructions it will be necessary to use additional factors to meet values shown in Table I. When these occasions arise further reductions are possible with the use of storm windows, double windows or weatherstripping.

If insulation is specified for a dwelling in the thicknesses indicated by this short cut method the dwelling will normally be approved so far as heat loss is concerned. The above examples have used maximum amounts of insulation to illus-

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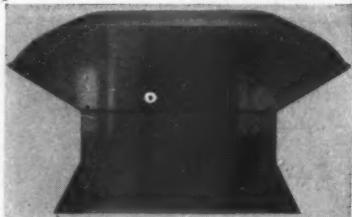
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trate the further economies made possible over the lesser requirements. It will of course be possible to meet the Heat Loss Factors of Table II with lesser amounts of insulation. However, to give the house quality, comfort and operating economy greater thicknesses than the minimum required should be used—up to 3" in floors, walls and ceilings.

Note: The variable of infiltration and glass could not be included in these calculations because of the variety of individual house design.

Note: Above tables based on WPB ruling effective Feb. 24—Subsequent changes not accounted for.

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Neubecker-Blow Pipe Fittings Patterns

(Continued from page 49)

Developing Patterns for Riveted Elbows

In developing the patterns for lap joint riveted elbows, provisions must be made for laps at the cross and longitudinal joints, also for the punching of rivet holes. This is accomplished by a simple, practical method as follows: Extend the line 7^0-7^v in Fig. 4 as shown by 7^0-a . Set the dividers equal to twice the thickness of the metal in use and set it off on the line 7^0-a from 1^v to b .

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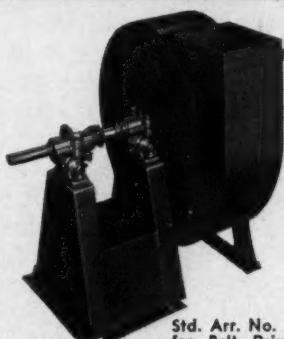
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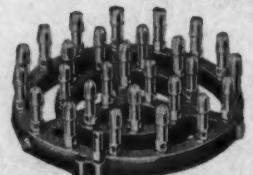
Using 7° as center with $7^{\circ}-b$ as radius, describe an arc to intersect the line $1-1'$ extended, at 1° . Draw a dotted line from 1° to 7° .

Now take the distance from 1° to 1° at the left, and set it off from 1° to 1 at the right and draw a dotted line from 1 to 7° . Where the horizontal lines drawn from the semi-neutral diameter, intersect the dotted line $1^{\circ}-7^{\circ}$ at the left and the dotted line $1-7^{\circ}$ at the right, these will be the proper points of intersections, when measurements are taken for developing the patterns for the riveted elbow. Note that the joint line $1^{\circ}-7^{\circ}$ at the left is longer than the joint line $1-7^{\circ}$ at the right, thus showing how the small and large ends are obtained without using tapering pieces.

When the cross joints of the elbow are to be riveted, the semi-neutral section is divided into as many divisions as there are to be rivets in the half cross joints (in this case six). Now take a stretchout of the semi-neutral section, starting at the point 4 , (for fish tail pattern) and place twice the number of these divisions on the line $K^{\circ}-L^{\circ}$ in Fig. 6, as shown by similar numbers. Through these points at right angles to $K^{\circ}-L^{\circ}$ draw indefinite lines as shown. Now measuring in each and every instance from the center line $K-L$ in Fig. 4, take the various distances to points of intersection on the dotted line $1^{\circ}-7^{\circ}$ at the left and set them off on similar numbered lines in Fig. 6, measuring in each and every instance from and below the line $K^{\circ}-L^{\circ}$. Trace the irregular curved

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line through points so obtained, then will *S-T* be the joint or miter cut of the large end of each piece of the elbow.

In a similar manner, measuring from the center line *K-L* in Fig. 4, obtain the distances to points of intersections on the dotted line *1-7¹* at the right and set them off in Fig. 6 on similar numbered lines, always measuring from and above the line *K'-L'*. Trace the irregular joint lines through points of intersections so obtained, then will *R-P* be the joint line for the small end.

The various intersections on the large and small ends, indicate where the rivet holes are to be punched, before passing the patterns through the pipe rollers. The longitudinal laps *R* to *S* and *P* to *T* are also equally punched as shown. Laps are allowed as indicated by the dotted lines.

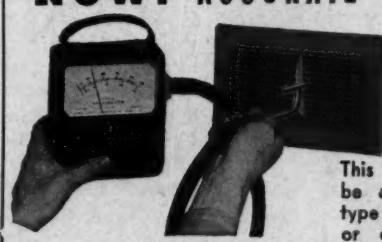
P-R-S-T is the pattern shape for the middle pieces; *S-T-4-4* the pattern for the large end piece and *P-R-4-4* the pattern for the small end piece.

As mentioned in connection with the pattern for Welded Elbows, the fish tail shape of the pattern shown in Fig. 6 allows the longitudinal seams to alternate on opposite sides, thus avoiding two thickness of seams on one side.

Fig. 7 is a sectional view showing the small end *A* joining the large end *B* in parallel pipe or non-tapering pieces.

The method described for obtaining the various patterns for riveted elbow is an approximate rule. It is not geometrically accurate, but is sufficient for practical work.

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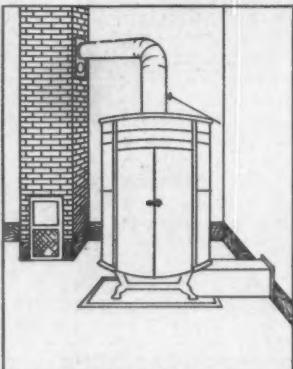
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R. Payne Wettstein, secretary of the Keeney Publishing Company and a member of American Artisan's advertising staff, has received his commission as a lieutenant (D-V-P) in the U. S. Naval Reserve and has been ordered to report for active duty this month.

Bob Williams, salesman for Hall-Neal Furnace Co., of Indianapolis, in the Southern Indiana territory, is now with the Engineering Department of the War Department.

Two new murals for the United States Naval Academy at Annapolis were dedicated recently by Admiral Ben Moreell. The paintings are on Armco stainless steel instead of canvas—the work of Buell Muller of Lake Forest, Illinois. Highly polished Armco stainless sheets, each 18 x 6 feet, were supplied months before Pearl Harbor.

The theme of the two murals are the harbor scenes of Hong Kong and London Pool, now unfortunately historic. Stainless steel gives a third-dimensional quality and possesses a vitality impossible to canvas.

Anthracite Industries Laboratory announces that Paul A. Mulcey has been granted a leave of absence to accept a commission as Lieutenant Senior Grade, U. S. N. R.

Major John Slezak, president of Turner Brass Works of Sycamore, Illinois, since 1939, has been Assistant Chief of the Ammunition Division of the Chicago Ordnance District since last January. Recently he has been assigned as chief of the Tank and Combat Vehicle Division where he will direct a program which already has run into hundreds of millions of dollars. Maj. Slezak helped organize the Machine Tool Division of the Army-Navy Munitions Board while on a duty tour in the army in 1940.

The May-Fiebeger Co., Newark, Ohio, is handling casting subcontract war work. They have lost number of factory personnel, called into war service or volunteers.

Fred M. Carlson, president of the American Tinning and Galvanizing Co. of Erie, Pa., has accepted a fulltime position with the War Production Board and will serve in the metals division at Washington for the duration of the war.

Mr. Carlson is a national authority on the hot dipping galvanizing process used widely in the sheet metal industry. In the absence of Mr. Carlson, the activities of American Tinning will be directed by George E. Peters.

J. H. Van Alsburg, has been granted a leave of absence by H. & Cooley Manufacturing Company, Holland, Michigan, and is assigned to the Navy Bureau of Ships.

The United States Navy Department in April extended Carnegie-Illinois Steel Corporation the privilege of flying the All-Navy burgee, the Navy's highest emblem of commendation. This flag is swallow-tailed pennant bearing the famous "E" symbol and the Navy's "fouled anchor."

For winning this high distinction employees of Carnegie-Illinois were the recipients of congratulations from Benjamin F. Fairless, president of the United States Steel Corporation, conveyed to them in a letter addressed to President Perry of Carnegie-Illinois.

William Douglas Kise, son of Frank E. Kise, manager job sales department of the William Heater Co. of Cincinnati, is now in active naval service at Midway Island. William Douglas Kise graduated from Annapolis 10 years ago in the first class of midshipmen, and then took torpedo training at Newport, R.

Send Us News of YOUR War Activities!

For the duration, the columns of this "War Time Trade News" Section will be devoted to news of the industry's personnel and organization war efforts and activities.

If some of your personnel join the armed forces, or various government agencies, let us know . . . in fact, anything pertaining to the industry's war achievement is news—send it in. The purpose of this section is to let the industry know, insofar as such news is permitted, what the companies are doing in war production . . . and where the many familiar faces that are missing have gone. Help us keep the trade informed. Send your news NOW!

★ War Time Trade News ★

Thompson Morrison, vice president of Morrison Products, Inc., Cleveland, manufacturers of Air-ram Blower Wheels, is on leave of absence for the duration of the war. He has been commissioned Lieutenant (jg) United States Naval Reserve and is temporarily stationed at Naval Training Station, Boston, Massachusetts. While he is absent, his work will be divided between Hunter Morrison, president, and A. Galaba, of engineer.

United States Register Co., Battle Creek, Michigan, has completed a number of heating subcontracts for army camps and defense buildings, with products of their manufacture—registers, grilles, for gravity and air-conditioning heating; back pressure dampers, exhaust fan dampers, dampers, paper clips, furnace pipe and fittings.

Charles T. Brandt Corporation, a small working firm in Baltimore, Maryland, has been awarded the coveted Navy "E"—a prized blue ribbon.

Mark T. Welsh, Indiana sales representative of the Quincy Stove Manufacturing Company, Quincy, Illinois, makers of Monogram heating equipment, enlisted in the Air Corps and expects to be given training as a Communications Officer on the Flying Fortress.

V. Patten Company, Sycamore, Illinois, has been busy for the last few months tooling up to handle a large contract for the Army Ordnance Department. The company expects to be at William's 80 percent on defense work by the end of June.

Marvin C. Schroeder, formerly a sales representative of Malco Gear Company, then in Illinois, is now an analyst with the Priority Division of WPB.

Maurice Edward Clark, formerly sales manager of Randall Graphite Co., Chicago, has received his commission as major in the Ordnance Department, and since April 20 has been stationed at the Aberdeen Proving Grounds, Aberdeen, Maryland. Major Clark is a veteran of World War I—Sixth Infantry—and was awarded the DSC.

The Allegheny Ludlum Steel Corporation, Pittsburgh, has passed the 90 percent participation mark in the purchase of War Bonds under the payroll allotment plan. During the week of April 20, Treasury Award flags were given to the company for all of its plants and were subsequently presented to the employees in individual ceremonies held at Brackenridge, Pa., Waterbury, N. Y., and Dunkirk, N. Y.

I. D. Brown, formerly head of the heating department, Republic Metals, Inc., 4040 W. Lake Street, Chicago is, now associate production and inventory analyst with War Production Board, Chicago.

William R. Taylor and Henry Geiger of Grant Wilson, Inc., Chicago, are now in service in the army.

C. Donald Dallas, president of Revere Copper and Brass Incorporated, presented two checks of \$1,000 each to Army and Navy Relief.

The checks totaling \$2,000 represent the contributions of Boy Scouts, Girl Scouts, school children and the people of America who sent in Defense Stamps.

Revere sent to each contributor a set of colored prints by the artist, Joseph Boggs Beale.

Marvin C. Barnum, Cincinnati representative of Waterman-Waterbury, is now with the War Production Board at Washington, D. C.

A VERY GOOD REASON FOR USING MERCOID CONTROLS



The heart of a control is the switch. It is one important unit deserving careful consideration when selecting automatic controls. Because of its relative significance in the life and function of a control, all Mercoid Controls are equipped exclusively with mercury switches of Mercoid design and construction—a proven product for dependable performance. A Mercoid switch is immune to dust, dirt, corrosion, oxidation, pitting, sticking of contacts, etc., all of which are common causes for trouble. You get this extra protection with every Mercoid Control. That is why plant engineers throughout industry in all its branches are using them. The automatic heating industry has always been closely identified with Mercoid Controls ever since its pioneering days. Mercoid Controls have taken the lead in this important field. Although priorities are now necessary, an adequate stock for essential uses has been provided for. Whether your requirements are for the present or the future—plan with Mercoid Controls and stay in the lead. An able staff of engineers is at your service.

THE MERCOID CORPORATION • 4209 BELMONT AVENUE • CHICAGO, ILLINOIS

KOOLSTACK FURNACES
FOR STOKERS
OIL or HANDFIRED
50,000 to 200,000 BTU's
Patented Dampener Uses All the Heat in the Added Heating Surface

THAT
IS SOMETHING
TO SELL

LEADER IRON WORKS, INC.
Decatur, Illinois

RUGGED CONSTRUCTION SIMPLE OPERATION

MASTER HEAT REGULATOR

TYPE A-23 Positive snap action—operates quietly, surely and safely.

WHITE MFG. CO.

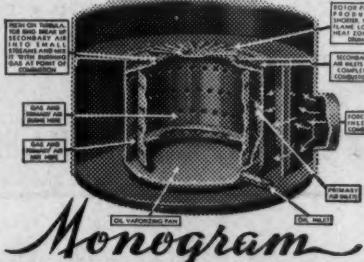
2368 University Ave., St. Paul, Minn.



Famous Patented MONOGRAM Vaporizing Burner Provides Highest Known Operating Efficiency with Oil

Full Forced
Winter Air
Conditioners

Booster
Gravity
Units



Utility
Room
Units
♦
Automatic
Water
Heaters

The QUINCY STOVE MFG. COMPANY, Quincy, Illinois

GILCO
Automatic
FURNACES and WATER HEATERS



DO
J. L. GILLEN CO.
DOWAGIAC • • MICH.

TRY US FOR QUICK DELIVERY

Sheet Metal Fabricating

MACHINES & TOOLS

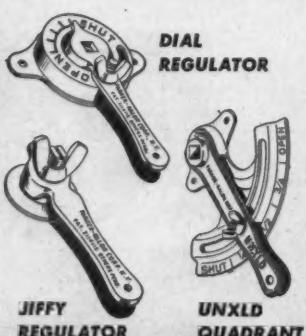
Write for Catalog and New Bulletin No. 53

WARD MACHINERY CO.

564 W. Washington Boulevard
Chicago, Illinois

A Type And Size For Every Need

For efficiently controlling light and medium dampers in heating, ventilating and air conditioning systems, specify Parker-Kalon Damper Controls. The line includes all types and sizes, at a range of prices to fit the needs of any job. Parker-Kalon Corp., 190-192 Varick Street, New York.



PARKER-KALON damper controls

Get the Facts About

SAL-MO ASBESTOS DUCTBOARD

The New Metal Saving Material
for Cold Air Return Ducts. Fire-
proof . . . Moistureproof. Fully
approved.

SALL MOUNTAIN COMPANY
176 W. Adams St. Chicago

HIGH EFFICIENCY...

LOW POWER COSTS

LARGE, STREAMLINED INLET MEANS MINIMUM
LOSSES DUE TO ENTRANCE FRICTION OR EDDIES

WITH THIS

Sturtevant MILL EXHAUSTER

"Designed and Built by the Pioneer"

B. F. STURTEVANT COMPANY
Hyde Park, Boston, Mass.
Branches in Principal Cities

Konzo Furnace Ratings

(Continued from page 44)

result that with even moderate chimney drafts, very high combustion rates could be obtained. Tests made with the use of internal baffles in the furnace showed that the maximum attainable combustion rate could be reduced somewhat. The only effective means found of keeping the combustion rate from becoming excessive was to use an automatic draft regulator in the smokepipe. Hence, the use of such regulators, in addition to the usual check dampers in the smokepipe, is recommended. Neither good fuel economy nor good temperature regulation can be attained if the combustion rate is allowed to run wild. Heating contractors are urged to spend the time in instructing the home owner on the proper care of his furnace and the necessity of keeping a uniform rate of combustion, rather than intermittent periods of violent combustion.

Interpretations To Existing Orders

(Continued from page 19)

(1) Assistance in disposing of frozen inventory materials to other companies permitted to use them, or to Government agencies;

(2) Re-sale to the source of supply;

(3) Assistance in securing war orders or in conversion of facilities to direct war production.

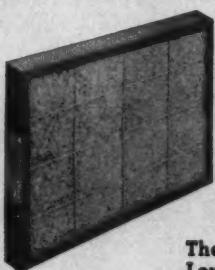
(4) Advice on obtaining financial assistance from the Bureau of Finance in the Division of Industry Operations;

(5) Assistance in the disposal of idle production equipment.

When an appeal is filed for permission to assemble processed inventories in excess of the terms of limitation or conservation orders, full description of inventories on hand should be enclosed.

These interpretations to orders are, we believe, the best way of getting specific rulings. WPB is willing and has now reached a place where attention can be given to interpretations. Therefore, if you send us your questions we will try to get you an answer either from Chicago WPB or Washington.

AXIOM AIR FILTER



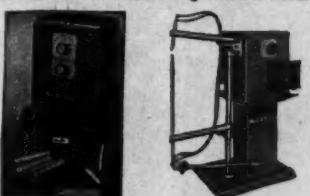
The result of fifteen years experience
Lower in cost — Higher in quality
Huge dust capacity—low resistance
Prompt delivery assured
Order now

BLOCKSM & COMPANY, MICHIGAN CITY, INDIANA

AMERICAN ARTISAN

Service Section

WELDING HEADQUARTERS



Electric welding equipment of every description to weld from a watch case to a door. Special or standard SPOT WELDERS from $\frac{1}{4}$ to 500 K.V.A. A.C. Arc Welders from 100 to 400 Amps. We invite contract Spot Welding in large or small quantities.

EISLER ENGINEERING CO.
CHAS. EISLER
781 S. 13th St. (Near Aven Ave.) Newark, N. J.



Save Money, Time and Muscle
Drill Concrete with the "Do-All" Combination Electric Hammer and Drill. Set expansion bolts 10 to 20 times faster than with hand tools. Drills concrete, brick, stone, metal, wood. Easy to maintain. Weights 15 lbs. Drills to $1\frac{1}{2}$ " in concrete. 2400 blows per min. Bulletin 450. Phone Austin 9244.
WODACK ELECTRIC TOOL CORPORATION
4644 W. Huron St., Chicago, Ill.

Classified

FOR SALE

FOR SALE: A power vacuum cleaner 42" suction fan with 10" tubing, bag 8' in diameter, 40' long, mounted on a 1931 Ford truck, with reconditioned motor. Address Bispala Brothers Furnace Co., 2328 First Ave., Hibbing, Minn.

HELP WANTED

COMPETENT ENGINEER, experienced in development and design of residential heating appliances or fans, offered an opportunity with a large reputable manufacturer, sufficiently foresighted to authorize expanded development work in this field. If sincere interests bind you and your future to such activities, it may be mutually beneficial to advise us of your qualifications, age, experience record, draft status, and salary expected. Address Key No. 556, American Artisan, 6 N. Michigan Ave., Chicago, Ill.

Wanted experienced Manager for Sheet Metal and Furnace business, in Ohio City. One capable of estimating and handling men. Address Key No. 535, American Artisan, 6 No. Michigan Ave., Chicago, Ill.

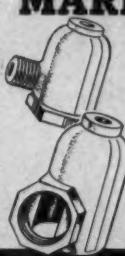
Sheet Metal Workers, also an Asbestos Shingle Roofer, in Midwest Section. State age and experience in first letter. Address Key No. 557, American Artisan, 6 No. Michigan Ave., Chicago, Ill.

SERVICE SECTION: Rates for display space similar to above in Service Section are \$5.00 per inch per insertion.

One-inch minimum space accepted. **Classified Section:** Rates for classified advertising are 5 cents for each word including heading and address. Count seven words for keyed address. Minimum \$1.00 for each insertion. Cash must accompany order.

Better for Every Spraying Purpose

MARLEY SPRAY NOZZLES



"Tops" for Air Washing, Humidifying, Brine Spray Lots, etc. Marley nozzles lead all in sales and in profits to you.

*Finer, more uniform spray.
*Effective operation at Low Pressures. * No internal parts to clog or wear.

MARLEY CO., INC. Kansas City, Kansas

Have You Something
to Sell?

or

DO YOU NEED ADDITIONAL
EQUIPMENT?

In this day of all-out war effort many plants are seeking equipment that may be standing idle in other shops. If you need equipment, American Artisan classified section will put your desires before the logical people to supply it. If you have something to sell—American Artisan Service Section will put your advertisement before many prospective buyers. In the Warm Air and Air Conditioning industry American Artisan is "Tops" in reader interest. Your products advertised in these columns will bring many inquiries and result in many sales.

SODER

Without priority

ALLEN SILOY SODER CONTAINS LITTLE TIN
BUT WORKS EFFECTIVELY WITH MOST
COMMON METALS. SEND FOR SAMPLE.

L. B. ALLEN CO., Inc.
6702 BRYN MAWR AVE., CHICAGO



SAVES

MORE TIME than any other machine used on square pipe work, per joint of pipe.

USABLE MORE OFTEN, per job, because SMITH'S CLEAT BENDERS EDGE THE PIPE AND MAKE cleats to join them together.

TWO SIZES

No. 12 twelve inch
No. 18 eighteen inch
R. E. SMITH 1521 Garden Place Waukegan, Ill.

BLowers — Fans — ExhauSters

THOROUGHLY REBUILT, for perfect performance. All types; all standard makes. All sizes including the big ones. Hundreds in stock, meeting all requirements. Attractive prices. Fully guaranteed. Expert engineering counsel. GENERAL BLOWER CO., Engineers, 403 North Peoria Street, Chicago, Illinois.

Trademark
YAGER'S Soldering Salts — Paste
Reg.

Two standard fluxes for all soft soldering. Safe, quick, certain. Buy them at your jobbers or write us if we cannot supply you.

1/2 lb., 1 lb., 5 lb. cans; 2 oz., 6 oz., 12 oz.

ALEX. R. BENSON CO., INC., HUDSON, N. Y.

IN STOCK NOW!

MISCELLANEOUS

DRILLS
BENCH: 15" Canady-Otto; No. 24 Canady-Otto;

3 spindle Canady-Otto B.B.; 8" Smur & Kamen;

BALL BEARING & SENSITIVE: Leland Giffords, 7" overhang, No. 2 M.T.; 10" Cleveland;

EYELLET MACHINES

Stimpson, Penn, Model B United States;

PUNCHES—HAND

No. 4 Clough, 24" thr.; No. 56 N.Y., 18" thr.;

PUNCHES—SINGLE END

No. A-18 & No. 62 Beloit; Rock River, 14" thr.;

No. 2 Hilles & Jones Horizontal;

SEARS

ANGLE: 66x $\frac{1}{4}$ " Lash & Allstetter;

POWER: 12" 14 ga. Strain; 10" 16 ga. ohl;

ROTARY: Quickwork 5/16" capacity, 60" Thr. 14 ga.

$\frac{3}{8}$ " Marshalltown Bevel Shear.

SEND FOR OUR CATALOG 404

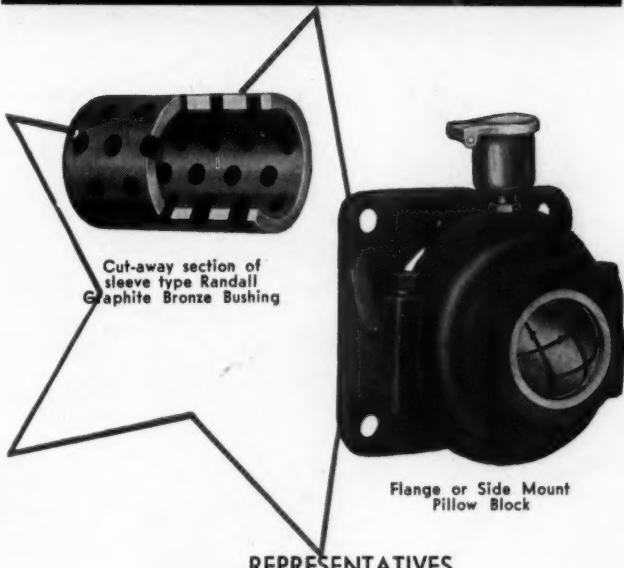
INTERSTATE MACHINERY CO., INC. — YARDS 5810

1433 W. PERSHING RD., CHICAGO, ILL.

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REPRESENTATIVES

C. W. Marwedel
San Francisco, Cal.

Salt Lake Hardware Co.
Salt Lake City, Utah

Edward D. Maltby Co.
Los Angeles, Cal.

Tek Bearing Co.
177 LaFayette, New York City
1192 Commonwealth Ave., Boston, Mass.

No Blackout

OF BEARING OPERATION

When you use

Randall

BEARINGS

Freedom's torch flares high!

Never before in history have industrial schedules called for greater production. Split-second timing leaves no room for faulty mechanical equipment . . . no 'time-out' to replace bearings that can't keep up the pace.

Your equipment will turn for Victory on Randall Bearings. Designed for action . . . built to give *Commando* performance everytime, Randalls are versatile, dependable, have over a third of a century's engineering background during which they have met virtually every type of bearing emergency. Randalls are prepared for the grave responsibility of wartime's need.

RANDALL BEARINGS HAVE BEEN INSTALLED ON ALMOST EVERY TYPE OF WAR PRODUCTION EQUIPMENT

In pinch-hitting for unavailable bearings, Randalls usually result in an improvement in bearing operation. Quiet, smooth-turning Randalls give many years of over-all economy, are easy to install with only minimum maintenance requirements. Randall Bushings are available in many styles and sizes. Randall self-aligning and self-lubricating Pillow Blocks may be adapted to your specifications.

*Speed your war production . . . write today
for catalog.*

RANDALL GRAPHITE PRODUCTS CORPORATION

DEPT. 711

609 W. LAKE ST.

CHICAGO, ILL.



BILL, LOOK WHAT I'VE GOT!
IT'S REALLY OPENED MY EYES ON
HOW I CAN STILL GET
BUSINESS TODAY.

THANKS, JOE. I'LL
SEND FOR A COPY OF
MILCOR DIGEST OF WARTIME
BUILDING REGULATIONS
IT'S JUST WHAT
I'VE BEEN LOOKING FOR

a Message to **MILCOR** customers

... on what you CAN do under war
regulations, to keep your business going

Yes, the government regulations are tough. They must be, to protect our war effort. But they are not half so tough as gossip and publicity might lead you to believe.

Many jobs are permitted — and MATERIALS ARE ON HAND — IN STOCK — IN MOST CASES — to do those jobs.

So don't get panicky. Make it your business to know what is allowed — and go after that business with all your usual energy and enthusiasm. Buying power is high — take advantage of the opportunities that are present and still permit you to continue your business.

For your convenience, Milcor has compiled a "Digest of Wartime Building Regulations on Building" — showing how these regulations apply to your use of Milcor products. Write for it today. Check up — and feel free to make legitimate use of any Milcor or other materials which are available to you.

*Sent
Free*



MILCOR

Digest of Wartime Building Regulations

Here is valuable information for you — to help you stay in business, by pointing out the many applications of Milcor products which can be made under latest war regulations. In only a few cases are there direct restrictions upon present stocks of Milcor materials in the hands of the trade. You can go ahead with confidence, by following the rules and co-operating with local authorities.

Write for your copy today.

MILCOR STEEL COMPANY

MILWAUKEE, WISCONSIN

CANTON, OHIO

Chicago, Ill. • Kansas City, Mo. • New York, N.Y. • Rochester, N.Y. • Baltimore, Md.